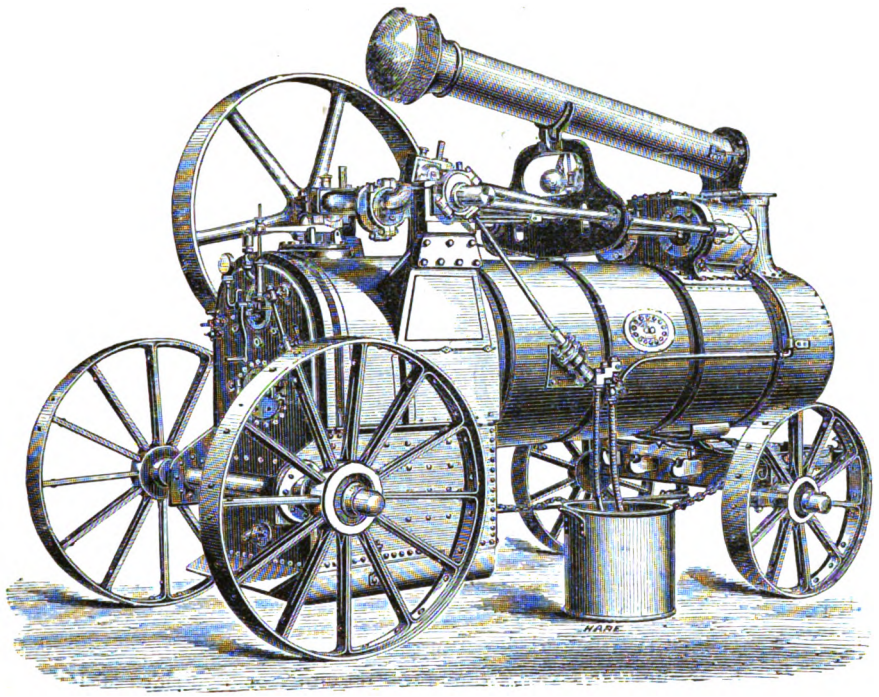
PATENT PORTABLE STEAM-ENGINES.



During the past few years the use of Portable Engines has largely extended, and they are now extensively employed in mining and manufacturing operations of a varied character. The rapid development of this branch of Engineering has increased the demand for Portable Engines of larger power, and it has thus been found desirable to introduce a new design for such Engines which should embody greater strength and rigidity in the working parts, as well as reduce the strain on the Boilers.

From the Illustration of the Patent Portable Engine it will be seen that the Boiler is flush throughout, and is lagged and cased the whole length, wrought-iron horn plates are riveted to the sides of the fire box, on the tops of which are bolted dovetailed castings for receiving the Crank Shaft carriages which slide in these dovetails. The Cylinders are steam jacketed, and are cast in one piece with the Valve Chest; they are mounted on the Boiler at the smoke-box end, and are arranged with a flange all round the base, which enables them to be secured in their place in the stiffest manner possible; strong lugs are cast on the front end of the Cylinders, to which are attached wrought-iron tubular stays for connecting same to the carriages of the Crank Shaft, thus both the Cylinders and Crank Shaft are rigidly maintained in their respective positions, and the strain on the Boiler by the working of the Engine is reduced to a minimum; further, it is quite free to expand and contract without affecting the positions of the Cylinders and Crank Shaft. A wrought-iron bridge plate is provided for receiving the governors, chimney stand, one end of the slide bars and the valve rods, and same is supported by the tubular stays above mentioned. By this arrangement the bolt connections to the boiler are reduced to two, viz. the Cylinders and the Force Pump.

These Engines are constructed from 14 to 30 Horse-power inclusive, they are of extra strength throughout, and may be worked at a high pressure; they are fitted with Patent Variable Expansion Apparatus, efficient Feed-Water Heater, and all the improvements embodied in the smaller Engines, and will be found most efficient and durable in working.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

Any Engine, Pump, Hand or Steam Crane, Hoist, Winding Engine, Mortar Mill, or other Machinery in Stock may be had ON HIRE.

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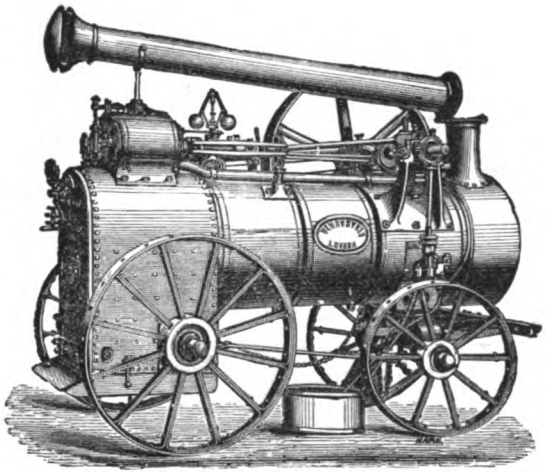
PORTABLE ENGINES.



These Engines are of the best material and first-class workmanship throughout, being equal in finish to the best Locomotive work.

They are unsurpassed for efficiency, strength, and durability in working, and embody the following important advantages and improvements:

1—**Great Economy in Fuel.** The Cylinders are Steam Jacketed, an efficient Feed-Water Heater is applied in connection with the Exhaust, heating the feed water to a high temperature, and every Engine is fitted with **Patent Variable Expansion Eccentric.**

2—**Large Cylinder area.** They are Steam Jacketed and are cast in one piece with the valve chest. They are made of a special mixture of the best iron, thus ensuring great durability in the internal wearing surfaces.

3—**Proportionate Boiler capacity.**

4—**Extra strength** of all the parts.

5—**Simplicity of arrangement** and ease of access to all internal details.

6—**Steel Piston, Valve Rods, and Slidebars.**

7—**All Lubricator Boxes** worked out of the solid material.

8—**Crank Shaft,** arranged to give off the power on either or both sides of Engine at once, is supported on a **Saddle Casting,** taking a large bearing on the Boiler.

9—**Efficient Continuous Vertical Force Pump,** certain in action and not liable to derangement.

10—**Simple Reversing Motion,** by means of which the Engine can be readily worked in either direction.

11—**Improved Wrought-Iron Wheels,** which for hot climates especially are most advantageous. Great care has been bestowed in their design and special machinery put down for their manufacture. They embody the greatest possible strength of construction and will be found practically indestructible.

12—**Great Durability,** owing to strength of parts and the large wearing surface provided in all the Brasses and Bearings.

13—**Complete Equipment.** Each Engine is fitted with second Lock-up Safety Valve, Pressure Gauge, and Steam Whistle, inclusive in the List price.

14—**Every Engine** is thoroughly tested under steam at a high pressure before leaving the Works, and is sent out with a complete set of Spanners, Firing Tools, Funnel, Tube Brush, Oil Feeder, and Waterproof Cover, and is furnished with Check Chains, Lock Chains, and Shoe.

A large number of these Engines in Stock for *Hire* to be had at once for temporary or general purposes. The Hirer may depend upon having an efficient Engine, as great care is taken after each is returned to have it overhauled and tested under steam before going out again.

Also Centrifugal, Barrel, Chain, and various other Pumps to be had at a few hours' notice.

BOOKS OF INSTRUCTION, WITH FULL PARTICULARS FOR THE MANAGEMENT OF PORTABLE ENGINES, ARE SUPPLIED WITH EVERY ENGINE.

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Price of Portable Steam-Engines.

WITH ONE CYLINDER.

Horse-power.	Diameter of Cylinder in Inches.	Length of Stroke in Inches.	Speed in Revolutions per Minute.	Weight without Case in Cwts.	Weight with Case in Cwts.	Measurement in Cubic Feet.	Price. £	s.	d.
2½	5¼	8	180	34	40	115	125	0	0
3	6¼	8	180	42	49	208	150	0	0
4	6¾	10	150	51	59	256	180	0	0
5	7⅜	12	125	64	74	285	200	0	0
6	8½	12	125	72	84	334	220	0	0
7	8⅞	12	125	75	86	349	235	0	0
8	9½	12	125	81	93	390	255	0	0
9	10⅛	12	125	90	103	443	275	0	0
10	10½	14	110	105	119	457	295	0	0
12	12	14	110	114	129	501	335	0	0

WITH TWO CYLINDERS.

Horse-power.	Diameter of Cylinder in Inches.	Length of Stroke in Inches.	Speed in Revolutions per Minute.	Weight without Case in Cwts.	Weight with Case in Cwts.	Measurement in Cubic Feet.	Price. £	s.	d.
	EACH.								
8	6¾	12	125	87	99	390	285	0	0
9	7	12	125	92	105	409	300	0	0
10	7⅜	12	125	104	117	423	320	0	0
12	8½	12	125	108	123	465	370	0	0
14	8⅞	12	125	125	138	472	415	0	0
16	9½	14	110	148	163	491	455	0	0
18	10	16	95	198	216	570	510	0	0
20	10½	16	95	213	235	630	545	0	0
25	12	16	95	233	255	710	660	0	0
30	13	16	95	274	297	790	780	0	0

These Engines are constructed with enlarged internal Fire Boxes for burning wood and refuse as fuel, at an additional charge on the price specified in List.

Packing for Export, in strong framed case closely boarded and wheels hay-banded, 20*s.* per Horse-power.

STEAM JET VALVES, very useful for creating a draught and raising Steam quickly, extra £1 5 0

LINK-MOTION REVERSING GEAR, extra, according to the size of the Engine, from £15 to 25 0 0

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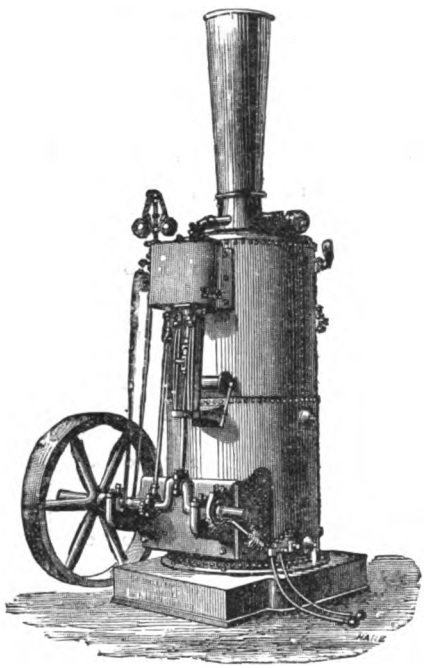
VERTICAL STATIONARY STEAM-ENGINE.



THE CYLINDER AREA AND BOILER CAPACITY are very large for the respective nominal powers. The attention of purchasers is particularly requested to these points, which are of the greatest importance in comparing the relative capabilities and prices of these Engines with those of other Makers.

THE CYLINDERS ARE STEAM JACKETED in Engines of 4 H.-P. and above.

REVERSING MOTION is attached to the Slide Valve Eccentrics, by means of which the Engines may be readily altered to run in either direction to suit the work.

GOVERNORS are direct acting, simple, and efficient.

CRANK SHAFTS, of the Locomotive form (enabling the Power to be given off on either or both sides at once), are supported in a substantial Fixing, which receives both ends of Crank Shaft. A strong Wrought-Iron Plate is riveted to the Boilers, to which the above Fixing is firmly bolted, entirely independent of the Boiler Barrel.

FORCE PUMPS, which are worked by an Eccentric, and fitted with brass Valve-Boxes and Treble Valves, are also attached to this plate, clear of the Boiler Barrel.

THE BOILERS have cross-section Lowmoor Tubes, are made of extra strength, and are of very large capacity, consequently steam well. Each is fitted with two Safety Valves, Pressure Gauge, Water Gauge, Gauge Cocks, and Blow-off Cock complete, and is supported upon a *Strong Base Plate*, forming an Ashpan, which is fitted with a regulator for the draught.

I have always a number of these Engines in course of construction at my Works in London, as well as others ready for delivery.

These Engines are fitted when required with Link-Motion Reversing Gear, Winding Gear, Chain Wheels, &c., suitable for hoisting and unloading cargoes, ship's use, &c.

Every Engine is thoroughly tested under steam prior to leaving the Works, and is provided with a set of Spanners, Firing Tools, Oil Can, and spare Gauge Glasses.

The Engines are all made to template and gauge throughout, so that purchasers can be supplied with duplicate wearing parts by simply stating the number on the Engine name-plate.

For EXPORTATION, the following duplicate parts are recommended to be sent out:

- 2 PAIRS MAIN SHAFT BRASSES.
- 1 SET OF BRASSES TO LARGE END OF CONNECTING ROD.
- 1 SET OF PISTON RINGS AND SPRINGS.
- 1 SET OF FURNACE BARS.
- 6 GAUGE GLASSES AND WASHERS.

Horse-power.	Diameter of Cylinder in Inches.	Length of Stroke in Inches.	Speed in Revolutions per Minute.	Weight without Case in Cwts.	Weight with Case in Cwts.	Measurement in Cubic Feet.	Price.		
							£	s.	d.
1½	4¼	7	215	16½	21	76	75	0	0
2½	5¾	8	180	25	30	122	100	0	0
3	6¼	8	180	33	41	131	110	0	0
4	6¾	10	150	42	52	253	130	0	0
5	7⅞	12	125	54	67	275	155	0	0
6	8½	12	125	63	76	324	175	0	0
7	8⅞	12	125	82	97	485	200	0	0
8	9½	12	125	86	101	487	215	0	0
9	10	12	125	95	110	520	235	0	0
10	10¾	14	110	112	128	597	250	0	0
12	12	14	110	133	152	631	290	0	0

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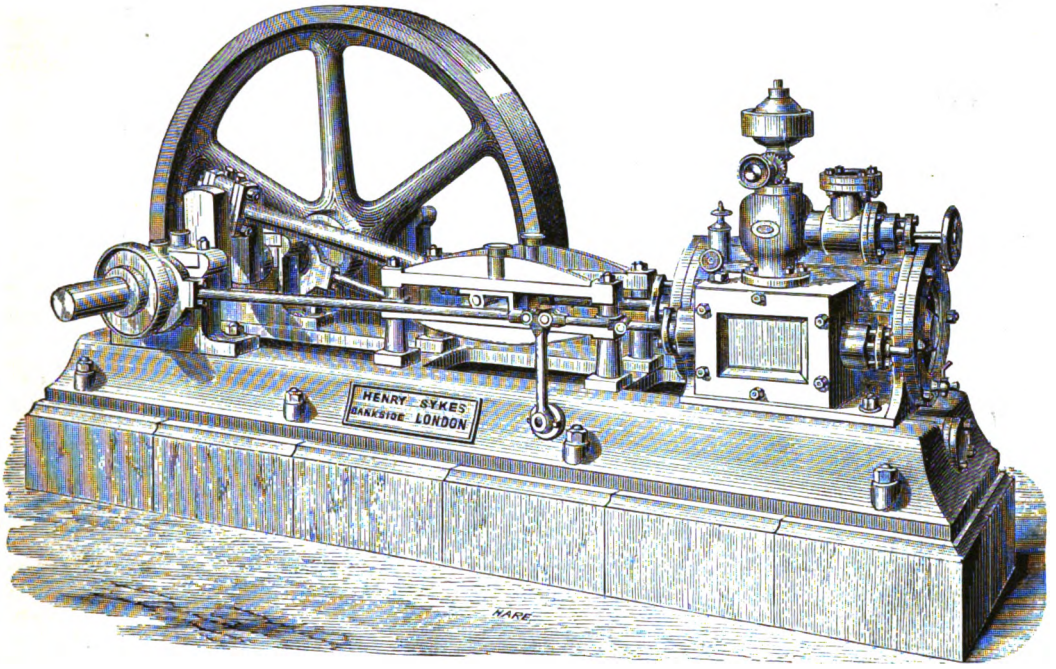
STATIONARY HORIZONTAL STEAM-ENGINES,

ON METAL FOUNDATION PLATES.



The Cylinders are of large area for their nominal powers, and with the steam chests, are felted, lagged, and cased.

The Crank Shafts are made of the best scrap iron, and the Carriages for same are fitted with extra long bearings, adjustable both horizontally and vertically.

The Fly Wheels are turned to receive a driving belt, and are accurately counter-weighted.

The Governors are direct acting, and have perfect control over the Engines.

The Force Pumps are each attached to foundation plate, in connection with water heater, and worked by an Eccentric from Crank Shaft.

Water Heaters, on a most efficient principle, are also fixed on the foundation plate, for heating the feed water in its passage from pump to Boiler by means of the exhaust steam.

The following List expresses the nominal or commercial horse-power; the indicated power in these as well as in the Portable Engines would be about three times the power here given, being only accurately expressed in the piston area or diameter of Cylinder, and proportionate strength in the other parts of the Engine.

Cornish Boilers, with the fire placed in an internal circular flue, are generally preferred where fuel can be obtained at a moderate cost; we therefore quote for this description in the Price List. They are made of the best material, extra strong, and tested by hydraulic pressure to 120 lb. per square inch. The fittings consist of two safety valves, pressure gauge, gauge-glass fittings, gauge taps, blow-off cock, fire bars, bearers, wrought-iron bridge, draught regulators, &c., &c.

STATIONARY STEAM-ENGINES.					CORNISH BOILERS.				
Horse-power.	Diameter of Cylinder in Inches.	Length of Stroke in Inches.	Speed in Revolutions per Minute.	Price.	Length.	Diameter.	Diameter of Flue.	Weight, including Fittings, in Cwts.	Price.
				£					£
4	6¾	10	150	70	7′ 6″	3′ 9″	2′ 0″	49	70
6	8½	12	125	95	10′ 0″	4′ 3″	2′ 4″	75	95
8	9½	12	125	120	13′ 0″	4′ 4″	2′ 5″	84	120
10	10¾	14	110	145	14′ 6″	4′ 8″	2′ 8″	96	145
12	12	16	95	165	14′ 6″	5′ 3″	2′ 10″	109	165
14	13½	16	95	190	17′ 0″	5′ 3″	3′ 0″	117	190
16	14½	20	85	210	19′ 0″	5′ 8″	3′ 0″	130	210
20	15¾	24	70	260	22′ 0″	6′ 2″	two 2′ 4″ or one 3′ 3″	145	260

Packing Engine for Export, in strong framed case closely boarded and fly wheel hay-banded, 15*s.* per horse-power.

The Prices include all to the ends of Stop Valve, Force Pump, and Fly-Wheel Shaft, also the Foundation Bolts and Plates for holding down the Engines.

Arrangements made for the erection and starting of these Engines, with or without Boilers.

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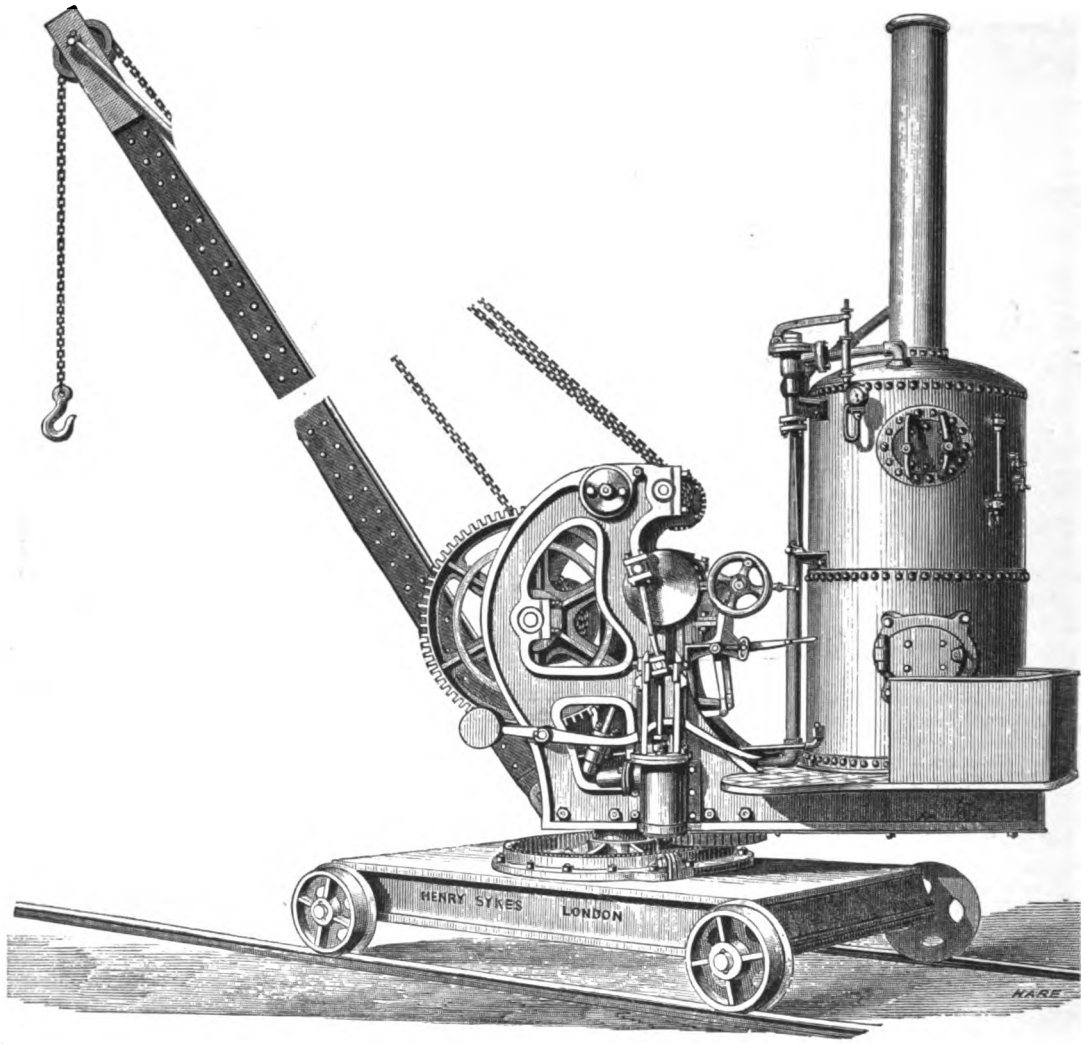
PORTABLE STEAM-CRANES.



In these Cranes some important improvements have been introduced, one of which is bringing the base nearer the ground; they are fitted with Link Motion, and the slewing of the Crane is effected by Steam in either direction; the central Pillar is of Wrought Iron; they are fitted with two Cylinders, Foot Brake, and Lever; the pinion slides on a feather let in the shaft; all the appliances are within the easy control of one man; and they are constructed of the best material and workmanship.

Reference to the accompanying Illustration will explain the general character of these Cranes.

PRICES.

To lift 2 Tons.	3 Tons.
£320	£350

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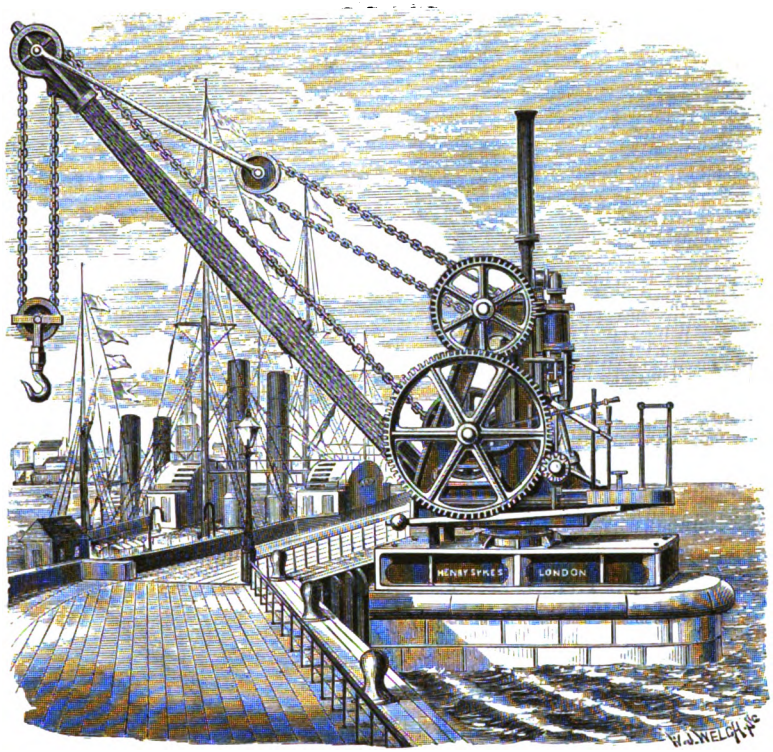
STEAM WHARF CRANE.

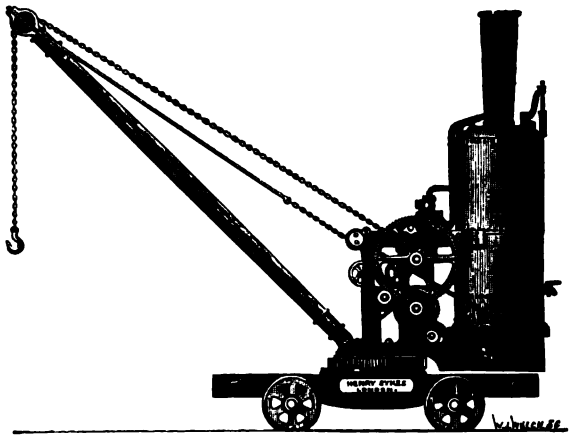
These Cranes are fitted with Two Cylinders, Link Motion; they hoist and turn either way by Steam power separately or together; all the Gearing is under the easy control of one man. Steam is supplied to the Crane from a stationary Boiler, which may be at any convenient distance from the work.

I have made Cranes of this construction capable of lifting 15 tons, and which are now at work in London.



STEAM TRAVELLING CRANES.

Steam Crane, lifting and steering the load simultaneously, is a useful and quick Crane for light work; mounted on Flanged Wheels to 4 feet 8½ inches Gauge, or with Flat Wheels; has a Wrought Iron Crane Post. A number of these Cranes were supplied by me during the construction of the Metropolitan Railways for excavating work, giving entire satisfaction.



PRICES OF THE ABOVE MAY BE HAD UPON APPLICATION.

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WROUGHT-IRON CONTRACTORS' TIPPING SKIPS.

With Boss for the Bale Catch, and strong Bow, as shown.

PRICES.

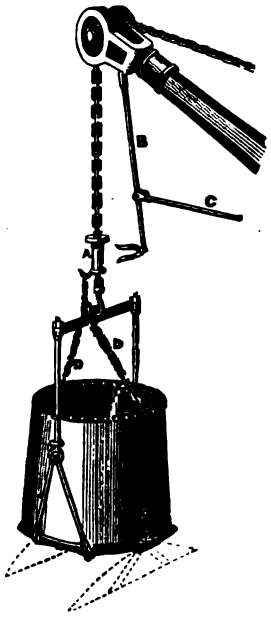
To hold, cubic yards	¼ yard.	½ yard.	¾ yard.	1 yard.
	£ s.	£ s.	£	£
	4 15	7 10	10	12

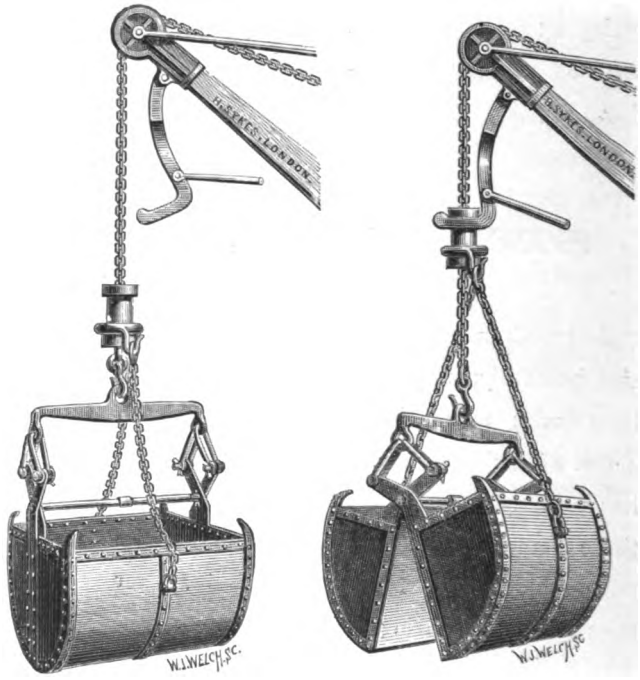
WOODFORD SKIP.

Discharging its load by means of a Catch, as shown.

To hold, cubic yards	½ yard.	¾ yard.
	£ s.	£ s.
	10 10	14 0

DUNBAR SKIP.





DUNBAR SKIPS, for discharging the load at the bottom, with Catch applied, as shown.

Same price as Woodford's Skips.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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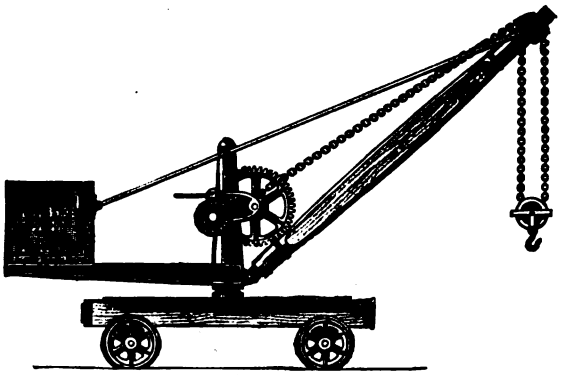
CRANES.

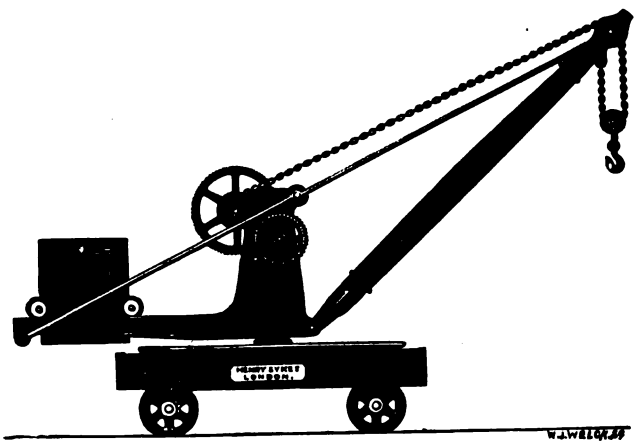
The 1-Ton Crane only is single purchase, the 2 and 3 Ton Cranes have both quick and slow motion, Turned Shafts, Gearing carefully fitted; they are all supplied with Brake, Balance Box for weighting, Wrought-Iron Axles, with Flanged or Flat Wheels, two Winch Handles, Jib Chain and Hook, and mounted complete on strong Oak Frame.



PRICES.

To lift 1 Ton	.. ..	Radius 9 feet	.. .. £42
„ 2 Tons	.. ..	„ 9 „	 56
„ 3 „	.. ..	„ 10 „	 66

The Cranes of this description are all fitted with quick and slow motion, powerful Brake, Hammered-Iron Pillar (with the exception of the 3 Ton, which has Cast-Iron Pillar), Balance Box for weighting, Bearing Rollers around the Pillar, Shafts turned, and Gear well fitted. Cast-Iron Sole Plate, mounted on strong Oak Frame, and supplied with Best-best Tested Chain and Return Block.



Where either of the above Cranes are required for shipment they can, if desirable, be sent without the woodwork at a reduced price, in which case a detailed drawing to scale will be sent for their erection upon the wood framing.

These Cranes, from 1 to 6 Tons, always ready or in course of construction here.

PRICES.

To lift 3 Tons	.. ..	Radius 10 feet	.. .. £77
„ 4 „	.. ..	„ 10 „	 112
„ 5 „	.. ..	„ 11 „	 140
„ 6 „	.. ..	„ 11 „	 160
„ 8 „	.. ..	„ 12 „	 200
„ 10 „	.. ..	„ 12 „	 235

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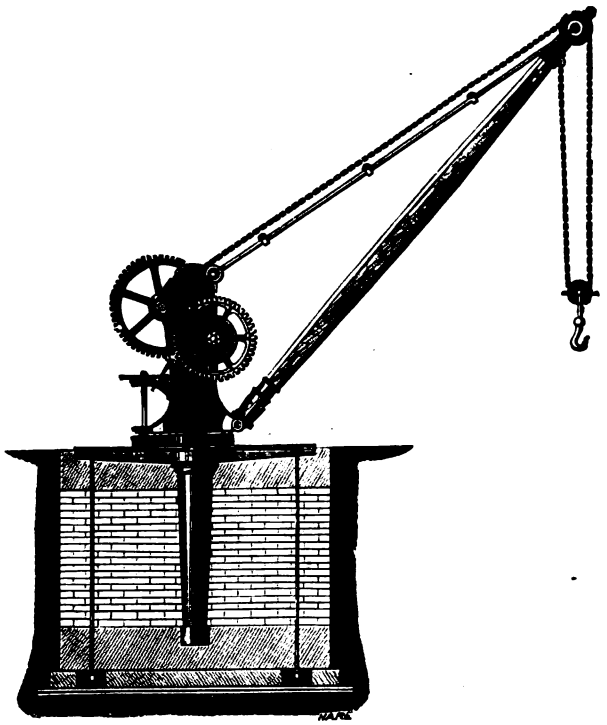
WHARF CRANE.

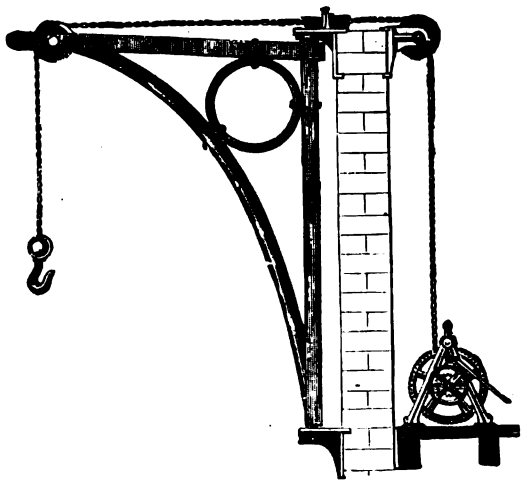


These Cranes are fitted with Wrought-Iron Pillar; above 3 Tons, quick and slow motion, Brake and Lever, and are supplied with Foundation Plates and Bolts, Return Block and Chain. The 1 Ton and 2 Ton sizes have no Return Block, and have Cast-Iron Pillars.

PRICES.

To Lift	Radius.	Price.	If with Jibbing or Radiating Gear.
ton.	feet.	£	£
1	12	33	..
2	13	45	..
3	14	65	71
4	14	83	90
5	15	108	120
6	15	130	140
8	15	165	178
10	15	215	225

WROUGHT-IRON STRONG JIB CRANE.



Price, with Wall Brackets, Bolts, and Nuts for 14-inch Wall, or thicker, Chain Pullies and Rollers. Chain and Crab Winch extra.

To Lift.	Radius.		Height.		Price.	Suitable Crab Winch.	Brake Extra.		Size of Chain	Best Tested Crane Chain. Per Ft.	
ton.	ft.	in.	ft.	in.	£	£ s.	s.	d.	inches.	s.	d.
½	3	0	4	6	8	2 10	11	6	3/8	0	8
1	3	6	5	0	9	4 10	12	6	7/16	0	10
1½	3	6	5	0	12	5 10	12	6	½	1	0
2	4	0	6	0	13	8 15	15	0	9/16	1	3
3	5	0	6	6	18	8 15	15	0	5/8	1	6

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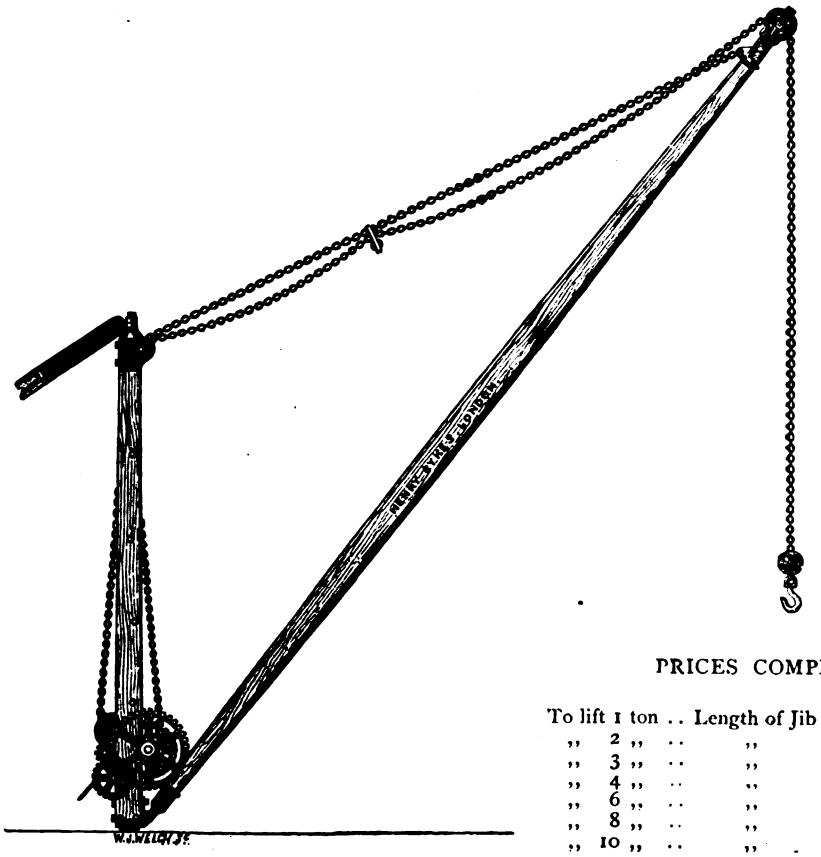
HENDERSON'S DERRICK CRANES.

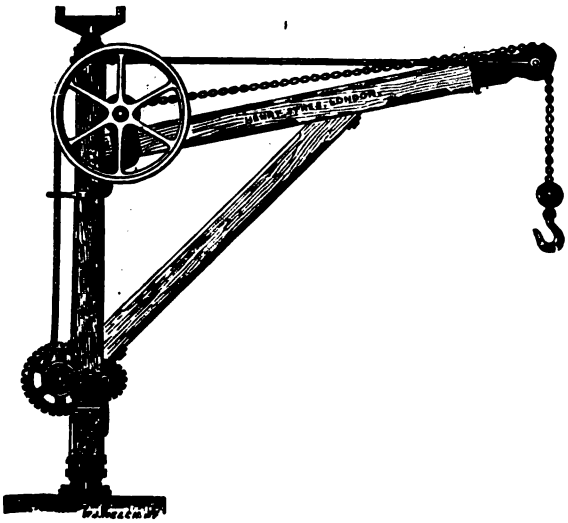


These useful Cranes are self contained and require but little foundation, they swing about three-fourths round the centre; the lifting and swinging of the load can be done simultaneously, they are all fitted with quick and slow motion.

PRICES COMPLETE.

				Extra for each 5 ft. added to Jib, up to 45 feet.	Price of Ironwork only.
To lift 1 ton ..	Length of Jib 25 feet ..	£40 ..	£2 10		
,, 2 ,, ..	,, 35 ,, ..	55 ..	3 15		
,, 3 ,, ..	,, 35 ,, ..	75 ..	4 15		
,, 4 ,, ..	,, 35 ,, ..	88 ..	6 0		
,, 6 ,, ..	,, 35 ,, ..	119			
,, 8 ,, ..	,, 35 ,, ..	162			
,, 10 ,, ..	,, 35 ,, ..	202			

PLATFORM CRANE.



Has three motions: light weights, to about 4 cwt. are lifted by pulling at the rope. The handle is used on the rope barrel shaft for heavier weights, and on the pinion shaft for extreme loads. Supplied complete with step, top bracket, rope and chain.

The 10-cwt. and 1-ton Cranes are without gearing, having handles on the barrel shaft only.

PRICES.

To lift 10 cwt.	Radius 7 feet	£17
,, 1 ton	,, 9 ,, ...	25
,, 2 ,, ...	,, 12 ,, ...	31
,, 3 ,, ...	,, 12 ,, ...	37

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

Any Engine, Pump, Hand or Steam Crane, Hoist, Winding Engine, Mortar Mill, or other Machinery in Stock may be had ON HIRE.

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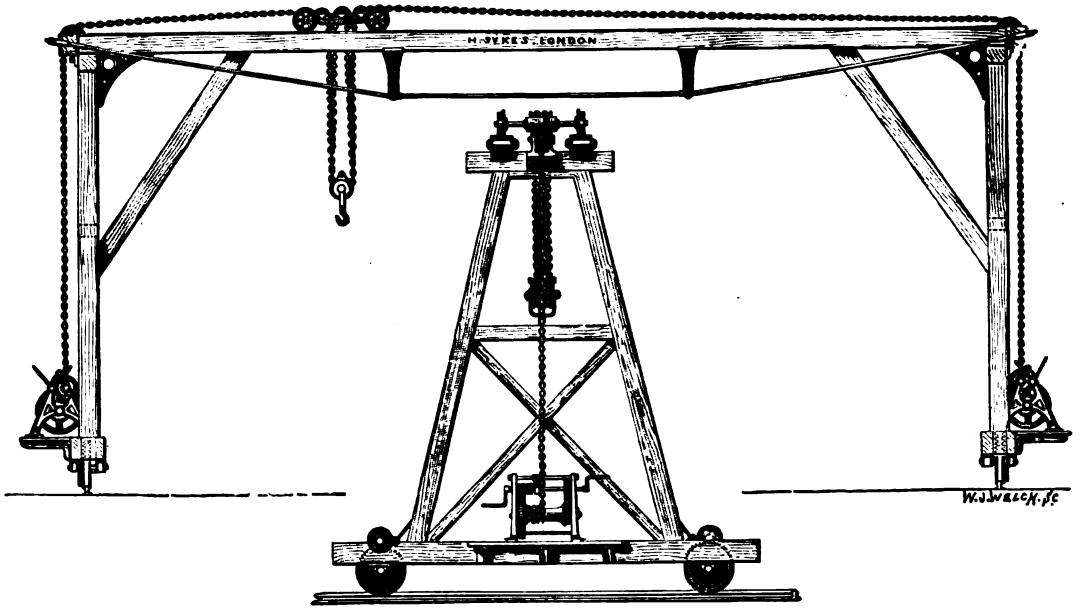
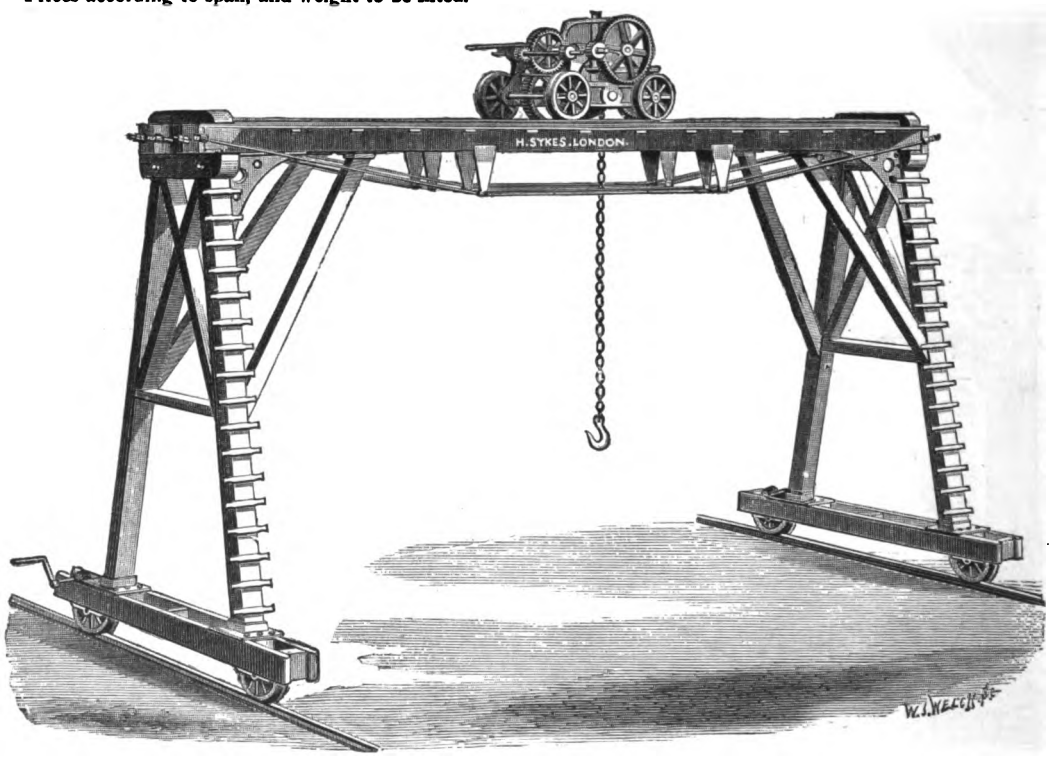
TRAVELLING CRANES.



In the above Traveller the work is done from below. By winding one of the crabs and unwinding the other at the same time, the top carriage and load suspended from it travel from one end of the Cross Cranes to the other; and by winding or unwinding one of the crabs only, the load is raised or lowered.

The lower Engraving represents a Travelling Crane wherein the weight is lifted from the top of the frame, and the travelling is effected by graving at the bottom part of it upon the ground.

Prices according to span, and weight to be lifted.



HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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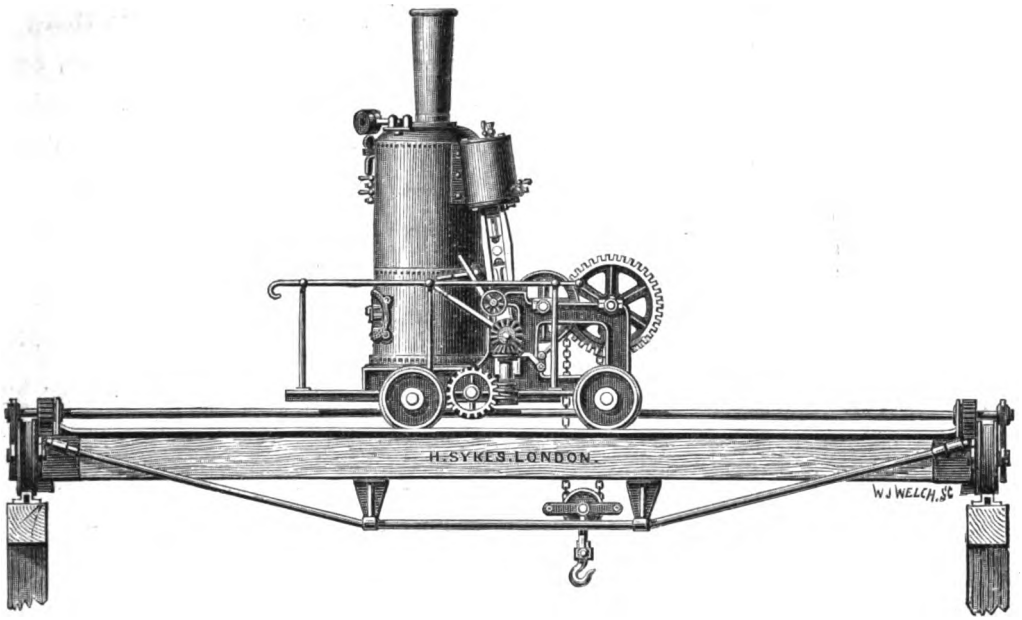
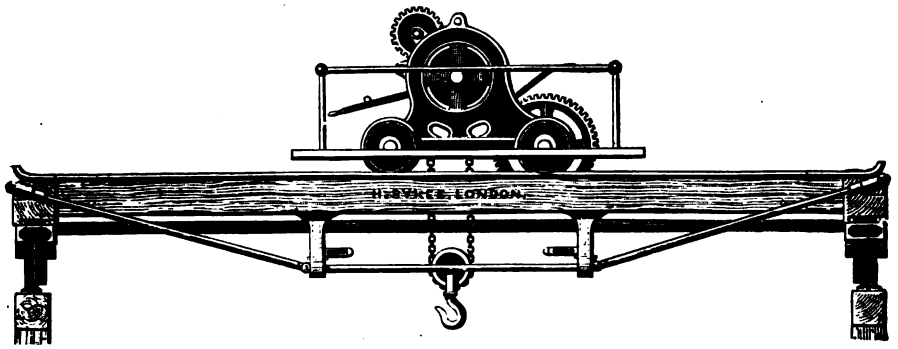
OVERHEAD STEAM TRAVELLER.



The Engines and Boilers of these Cranes are of the usual vertical type; the Engines are fitted with a pair of Cylinders and link motion. The crab works in either single or double gearing, foot brake and pawl; and all the motions for lifting and travelling, both longitudinally and transversely, are worked by the Engine, and under complete control of the engineman.

OVERHEAD HAND TRAVELLER.



The crab is fitted with single or double purchase gear and powerful brake; it will carry the load longitudinally or transversely, the whole being worked from one platform, which is connected to the crab.

Prices and specifications of these Travellers may be had on application.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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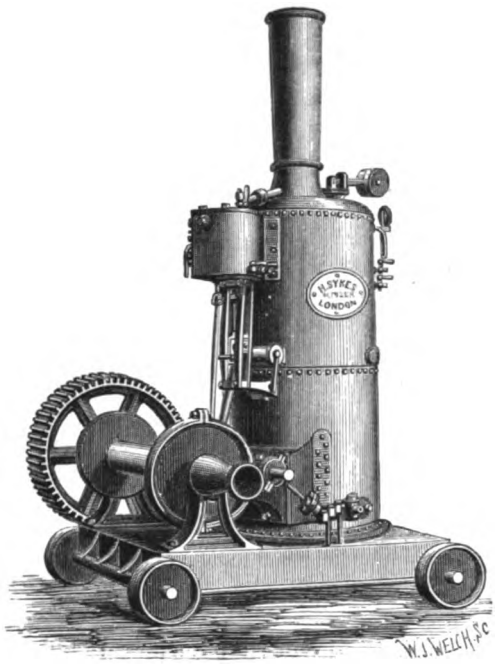
HOISTING ENGINES.



These Engines are mounted on strong Iron Frames, and are complete with Boiler, Engine, Winch, Foot Brake, Regulator Handle, &c., all under the easy control of the driver; they can be used as Barrow Hoists, for Pile Driving, or for other purposes; link motion can be applied when required, at an extra cost.

The Engraving shows the ordinary Vertical Engine with Single Cylinder, applied to a Winch; but I also make them with Two Cylinders.

Prices are given below for both descriptions of Engines.

SINGLE CYLINDER.

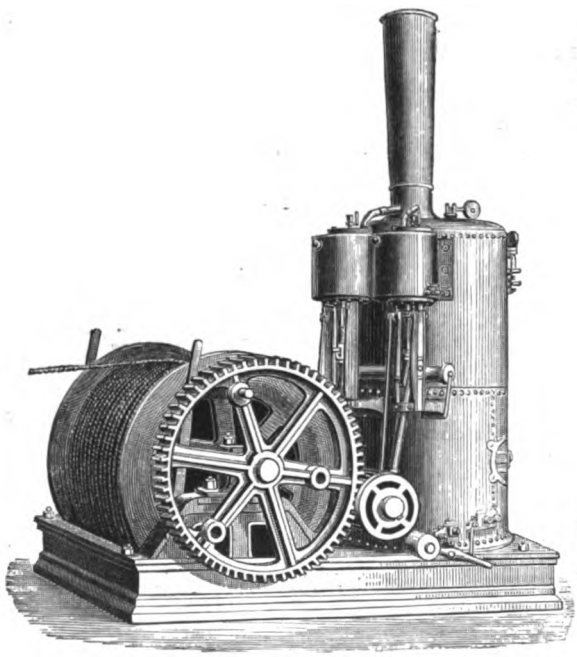
Diameter of Cylinder, without wheels.

4¼ in.	5½ in.	6 in.	6¾ in.	7½ in.	8½ in.
£100	£140	£165	£180	£220	£235

DOUBLE CYLINDERS.

Diameter of Cylinders, without wheels.

5½ in.	6 in.	6¾ in.
£225	£250	£275



If supplied without wheels and axles the first three sized Single-Cylinder Engines £5 less, and for the remaining, both Single and Double Cylinders, £7 less.

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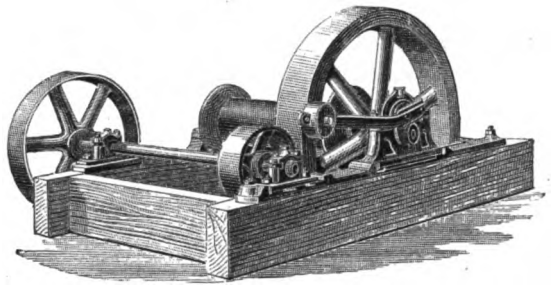
BARROW HOIST.



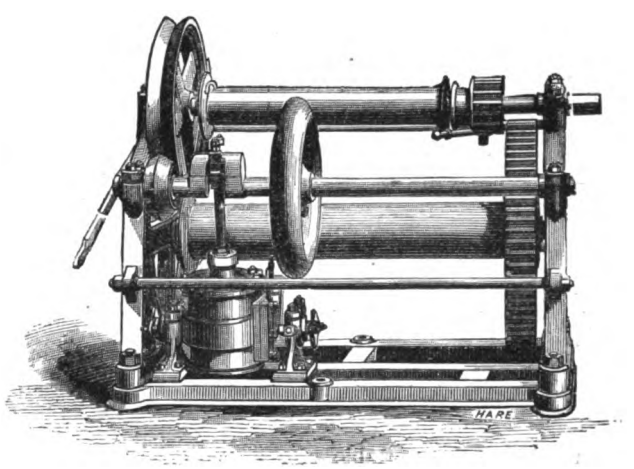
This simple Machine was put up by me about ten years ago, and since then it has been adopted, and various builders have had it in use. I have supplied it advantageously for dragging Timber, where it may have been unloaded, a considerable distance to the Saw Mill, and made it the means of placing the Timber on the Bench for cutting. It was also applied in a slightly different form for the Hoisting all the Bricks and Mortar in Broad Street Station, the Grosvenor Buildings, Hyde Park, &c.

The whole action of the Machine tends upon shifting the centre of the barrel by means of an eccentric, which is thrown in and out of contact by a movement of about ¼ of an inch; one way the chain barrel pulley comes in contact with the driving wheel, and the other way the barrel is thrown on to the brake, the bow attached to the eccentric giving the motion in either direction.

PRICE £25.

DOUBLE-BARREL HOIST.

The top barrel of this Hoist is worked by friction wheels, and the second purchase by toothed gear. It is adapted for Steam, as shown in the Illustration, or fitted with fast-and-loose pulley and driven by a band from an ordinary Portable or Vertical Engine.



PRICE, WITH ENGINE WORK, £80
„ WITHOUT DITTO .. £50

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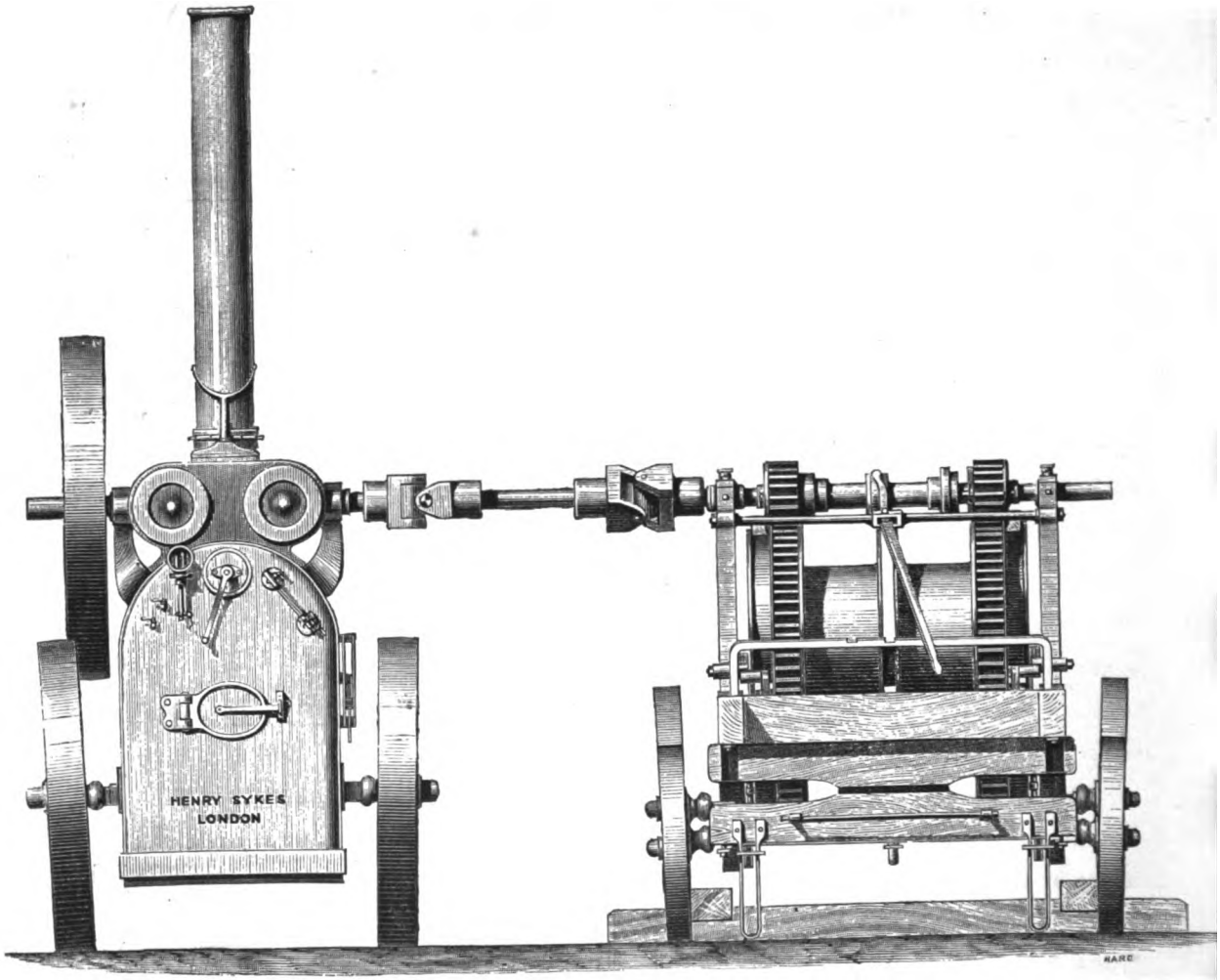
WINDING AND HOISTING MACHINERY,

FOR MINES, INCLINED PLANES, &c.



The Engine is of the Portable description indicated in previous pages, but is fitted with Link Motion for Reversing. A brake can be applied to the fly wheel of the engine if desired, in addition to the powerful brake which is applied to the gear; the crank shaft of the Engine is attached to the winding gear, by means of a strong universal joint, which allows for any slight deviation from a straight line which may take place. The drums of the gear are arranged for winding and lowering simultaneously, or can be used either separately or together, and each is fitted with a strong lever brake, and the whole is made portable, strong, and efficient.

PRICES AND SPECIFICATIONS ON APPLICATION.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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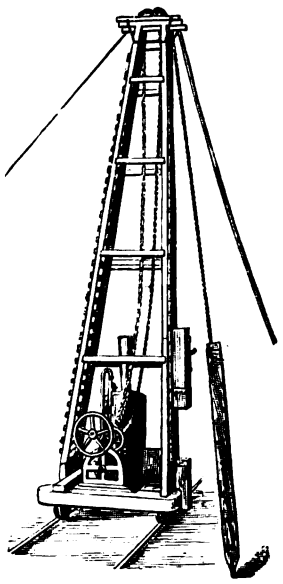
PILE DRIVERS.



HAND PILE DRIVER, WITH WINCH, CHAIN, MONKEY, NIPPERS, TOP GEAR.

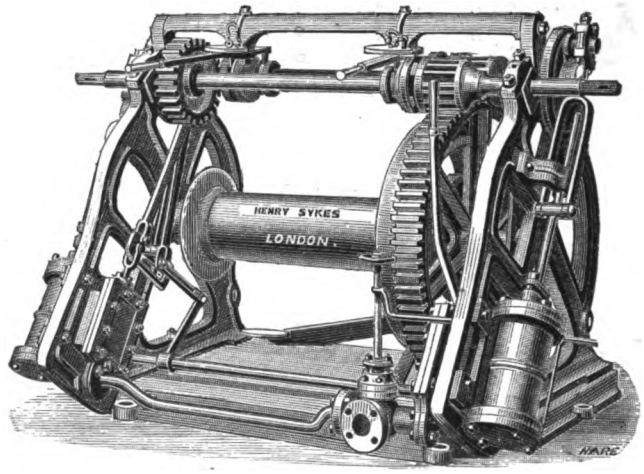
	Price.	With Framework Complete.
With 15-cwt. Monkey	£28	.. .. .. £45
20 ,, ,, ...	£37	.. .. .. £60

STEAM PILE DRIVER, WITH WINCH, BOILER, FRAMING, MONKEY, &c., £225.

ENGINE, BOILER, AND STEAM CONNECTIONS ONLY, £170.

DOUBLE-CYLINDER STEAM WINCHES.

In these Winches the steam connecting pipe is of copper. Each Winch is fitted with handles for use when steam is down; link motion, for reversing; foot brake and lever; and can be worked in single and double gear. They can be had with or without warping ends, and either single or a pair of Cylinders. Can be used for warehouses, pile driving, as well as for ship purposes.



		£	s.	d.
With 2 Cylinders	Lifting 1 Ton direct	80	0	0
2 ,, ...	,, 2 Tons direct	90	0	0
2 ,, ...	,, 3 ,, ...	100	0	0
2 ,, ...	,, 4 ,, ...	110	0	0
2 ,, ...	,, 5 ,, ...	120	0	0

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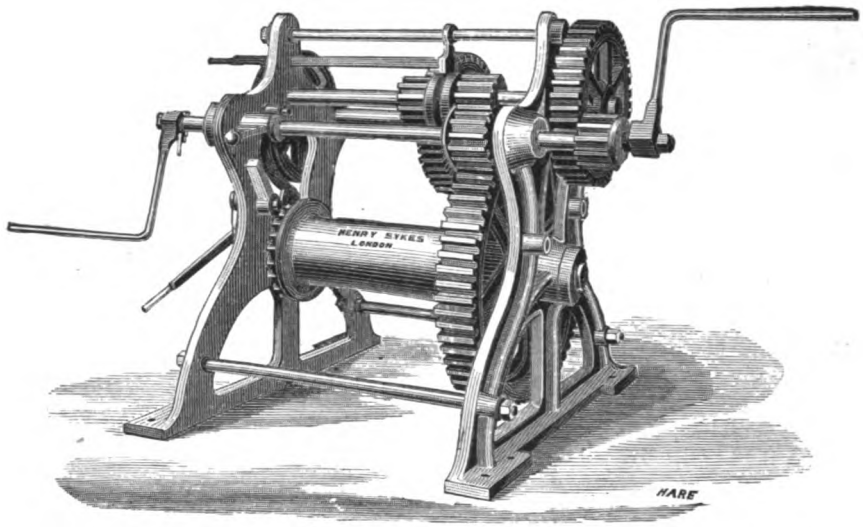
CRABS.

VERY STRONG, AND KEPT IN STOCK FOR LIFTING UP TO 30 TONS.



SINGLE PURCHASE.

To lift with 1 to 2 Sheave Pulley Blocks.	Without Brake. £	s.	d.	With Brake. £	s.	d.
No. 3 .. 2 Tons ..	4	5	6	5	10	0
4 .. 3 „ ..	5	0	0	6	10	0
6 .. 6 „ ..	7	5	0	8	15	0
7 .. 8 „ ..	10	10	0	12	0	0

If Brass Bushed, 25*s.* extra.

DOUBLE PURCHASE.

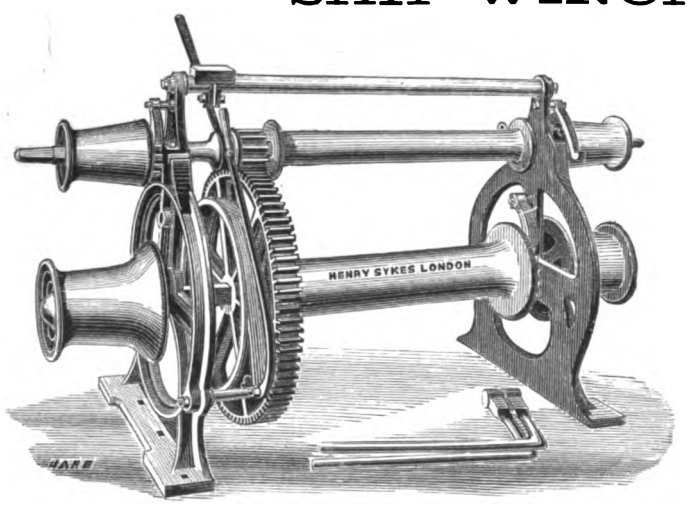
To lift with 1 and 2 Sheave Pulley Blocks.	Without Brake. £	s.	d.	With Brake. £	s.	d.
No. 12 .. 4 Tons ..	7	7	6	8	17	6
15 .. 10 „ ..	13	12	0	15	15	0
17 .. 16 „ ..	20	0	0	23	10	0
18 .. 20 „ ..	25	0	0	27	10	0

If Brass Bushed, No. 12, 27*s.* 6*d.* extra.
„ „ „ 15, 35*s.* 0*d.* „
„ „ „ 17 and 18, 43*s.* 0*d.* extra.

TREBLE PURCHASE.

No. 19, to lift 30 Tons, with 2 and 3 Sheave Blocks, £38.

SHIP WINCHES.



SINGLE PURCHASE.

To lift direct.	Price. £	Distance between sides.
No. 21 .. 10 cwt. ..	4	2′ 0″
22 .. 15 „ ..	7	3′ 0″
23 .. 20 „ ..	10	3′ 6″
24 .. 30 „ ..	13	4′ 0″
25 .. 40 „ ..	18	5′ 0″

DOUBLE PURCHASE.

No. 26 .. 25 „ ..	8	3′ 0″
27 .. 40 „ ..	12	3′ 6″
28 .. 60 „ ..	15	4′ 0″
29 .. 80 „ ..	21	5′ 0″

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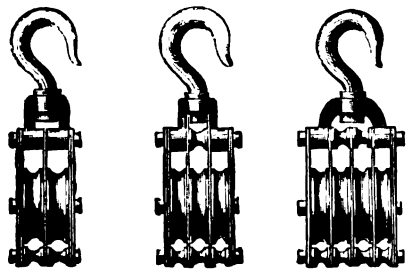
PULLEY  BLOCKS.

LONDON PATTERN WROUGHT-IRON PULLEY BLOCKS.

Diameter of Sheave	2½"	3½"	4"	4¾"	5"	6"	7"	8"	9"	10"	11"	12½"	14"	15"	16"
Width of Groove ..	⅜"	½"	⅝"	⅝"	⅞"	1"	1¼"	1½"	1¾"	2"	2¼"	2½"	2¾"	3"	3¼"
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Snatch Block ..	6 0	6 0	7 0	8 6	11 6	13 6	16 6	21 6	32 0	60 0	80 0	110 0	140 0	170 0	210 0
1 Sheave	4 0	4 6	5 9	7 6	10 0	11 6	14 0	19 0	30 0	52 6	72 0	98 0	110 0	130 0	164 0
2 Sheaves	5 6	7 0	8 6	11 0	15 6	17 0	24 6	35 6	50 0	98 0	124 0	144 0	170 0	203 0	242 0
3 ,, ...	7 0	8 6	10 6	14 0	19 6	21 6	30 6	48 6	70 0	127 0	157 0	190 0	222 6	262 0	310 0
4 ,, ...	8 6	10 0	12 6	18 6	25 6	28 6	46 0	63 0	92 6	157 0	190 0	222 6	280 0	352 0	400 0
Brass Sheaves, extra per Sheave ..	0 9	1 6	2 0	3 0	4 6	6 3	7 9	11 6	15 3	21 6					
Diam. of Chain the Blocks will take	..	..	..	3/16"	¼"	5/16"	⅜"	7/16"	½"	9/16"	⅝"	11/16"	¾"	13/16"	7/8"

GIN BLOCKS OR RUBBISH WHEELS.

Diameter of Pulley	3½"	4¾"	6"	7"	8"	9"	10"	11"	12"	14"	16"	18"	20"	22"
Width of Groove ..	¼"	⅜"	1"	1¼"	1"	1"	1"	1"	1"	1¼"	1½"	1½"	1½"	1½"
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
PRICE	5 9	6 3	7 0	7 9	8 6	9 3	10 0	11 0	12 0	13 0	16 6	21 0	24 0	27 6

BEST PROVED SHORT-LINK CRANE CHAIN.

Diameter of Iron	¼"	5/16"	⅜"	7/16"	½"	9/16"	⅝"	11/16"	¾"	13/16"	1"	1⅛"
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Price per cwt.	64 6	59 0	51 6	47 0	43 0	40 6	39 6	39 0	38 6	37 6	37 0	37 0
Proof Strain, tons	½	1	2	3	4	5	6	7	9	12	16	21
Weight per yard, lbs.	2⅛	2¾	4	5½	7	9	12	13½	15	21	28	36

Working Strain of Chains should not exceed half the Proof Strain.

BEST WHITE MANILLA ROPE FOR PULLEY BLOCKS.

Circumference	2"	2½"	2¾"	3¼"	3½"	4"	5"	5½"	6½"	7"
Breaking Strain, tons	1⅛	1½	2	2½	3	4	6¼	8	11	12
Working Load, cwts.	4	5	7	8	10	13	21	26	37	40
Approximate Weight per Fathom, lbs. ..	1	1¾	2	2¾	3¼	4¼	6¼	8	11½	13
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d	s. d.	s. d.
,, Price ,, ..	0 10	1 6	1 9	2 6	2 10	3 6	5 6	6 9	9 0	11 0

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PULLEY BLOCKS.

WESTON'S PATENT DIFFERENTIAL PULLEYS

Will lift a weight with much less labour than other pulleys. The powers given are simply as a general guide, not as a guarantee.

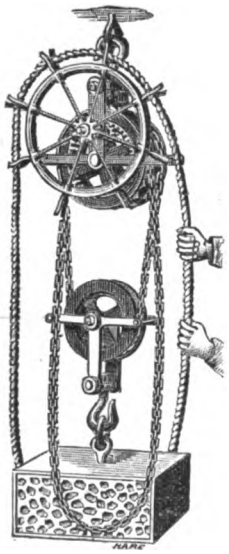
	cwt. 5	cwt. 10	cwt. 12	cwt. 20
Tested to	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price without Ratchet	1 0 0	1 10 0	1 10 0	2 0 0
Chain, per foot	0 0 6	0 0 6	0 0 7	0 0 9
With Ratchet	..	..	..	2 13 0
Chain, per foot	..	..	..	0 0 9

	cwt. 30	cwt. 40	cwt. 60
Tested to	£ s. d.	£ s. d.	£ s. d.
Price without Ratchet	2 15 0	3 5 0	..
Chain, per foot	0 0 10	0 0 10	..
With Ratchet	3 5 0	3 12 6	5 7 6
Chain, per foot	0 0 10	0 0 10	0 1 1

The length of Lift should always be stated, or the length of Chain, reckoning it at four times the height of Lift.

QUICK MOTION PULLEY.

For lifting sacks, &c. Tested to ½ ton. Price 30*s*. Chain, 6*d*. per foot.



WESTON'S PATENT DIFFERENTIAL PULLEYS.

With Sprocket, Wheel, and Rope.

	tons. 2	tons. 3	tons. 4	tons. 5
Tested to	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price	4 0 0	5 15 0	7 0 0	10 0 0
Chain, per foot	0 0 10	0 1 1	0 1 3	0 1 6
Rope ,, ...	0 0 3	0 0 3	0 0 3½	0 0 3½

	tons. 6	tons. 8	tons. 10
Tested to	£ s. d.	£ s. d.	£ s. d.
Price	12 0 0	16 0 0	20 0 0
Chain, per foot	0 2 4	0 3 0	0 3 6
Rope ,, ...	0 0 3½	0 0 3½	0 0 3½

The length of Lift should always be stated, or the length of Chain, reckoning it at about three times the height of Lift.

Before using this or any other Pulleys, as a safeguard against risk of injury to anything valuable, purchasers should try them to their indicated power, with something involving no damage in case of fracture. Also, when ordering, allow a suitable margin, instead of working them too near their indicated powers.

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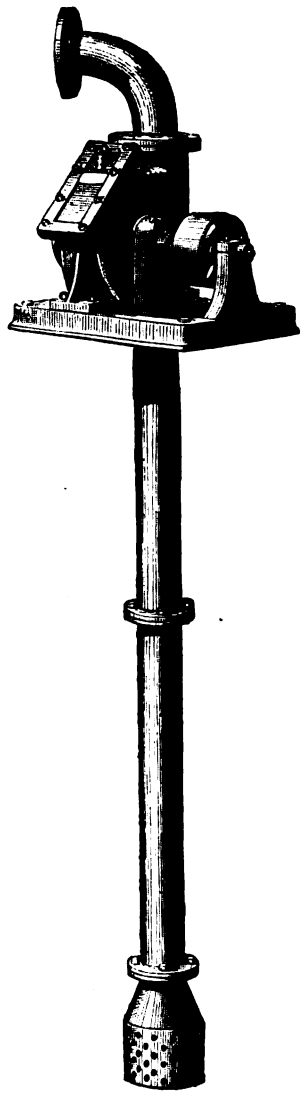
CENTRIFUGAL PUMPS.



The running fans or discs of these Pumps are made of the best gun-metal, cast in one piece, and the spindles are of steel. The whole, as well as the bearing brasses, are finished to gauges, so that duplicate parts can be sent at any time.

By means of the covers, the fan and all the working parts may be removed in a few minutes, without breaking the joints of either suction or delivery pipes.

I have supplied these Pumps in many instances to River Conservancies, and to numerous Ship Insurance Companies and private Shipowners, for assisting in raising sunken vessels, and have always a number of them on hand, for these and other purposes.

I keep also for ship purposes, where a direct lift cannot always be had, a quantity of indiarubber suction pipe for such an adaptation, or for connection from barge to vessel, so as to admit of the rising of the vessel without breaking joints.

Diameter of Pipes.	Gallons of Water discharged per Minute.	Price of Pump. £	Price of Foot Valve and Strainer. £ s. d.
5"	400	25	3 10 0
6"	600	27	4 0 0
7"	800	37	5 0 0
8"	1000	40	6 0 0
9"	1300	45	7 0 0
10"	1700	55	8 0 0
12"	1800	90	10 0 0
15"	4000	105	14 0 0
18"	5000	170	22 0 0
20"	7000	190	25 0 0

A large stock of these and various other descriptions of Pumps kept ready for delivery.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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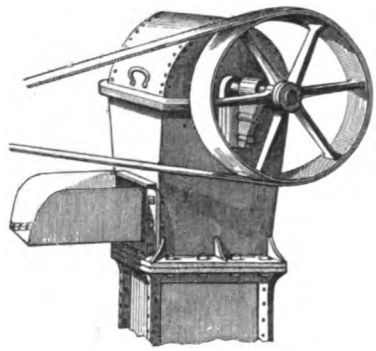
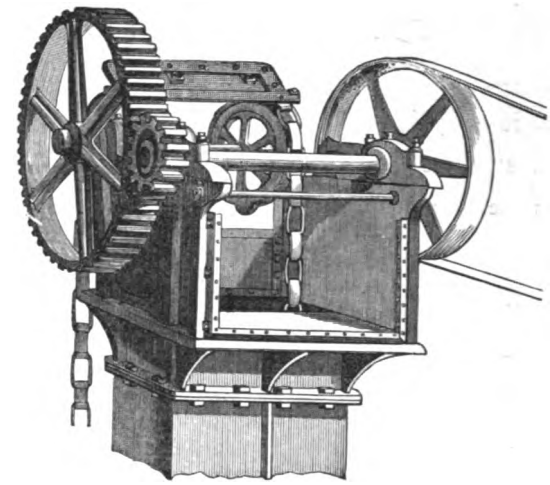
MURRAY'S PATENT CHAIN-PUMPS.



Capable of raising 100 to 1000 Gallons per Minute.



From 2000 to 5000 Gallons per Minute.

The total absence of Clacks, Valves, and Packing is the great recommendation to these Pumps, as, on the one hand, no foreign matter, such as weeds, mud, sand, &c., can possibly choke the Pump; and, on the other, a great saving of time is effected by the Pump not having leathers to be renewed, valves re-packed, &c.

I have become a manufacturer of these Pumps, which are well known for their extensive application to Contractors' purposes.

All Sizes are generally in Stock, ready for delivery.

A large Stock of Chain Lifts, Tumblers, Barrels, &c., of MURRAY'S Standard Sizes kept in Stock, and of the best Material and Workmanship possible, for renewals to any Chain Pump of this description.

The wearing parts of the Chain are Steeled in all the Sizes of Pumps.

The Lifts are either of Steel entirely or are Steeled round the Edges. The Small Sizes have Wrought-Iron Closed-back Frames; the Larger Sizes, Cast-Iron Barrels with Faced joint connections.

PRICES.

Size of Pump.	Number of Gallons per Minute.	10 feet high.	Nominal Horse-power for 10 feet high.	For each additional foot in height add
		£		£ s. d.
8 × 4	500	36	1½	2 8 0
10 × 5	700	45	2	3 0 0
12 × 6	1000	54	3	3 12 0
14 × 7	1300	63	4	4 4 0
16 × 8	1600	72	5	4 16 0
24 × 8	2000	105	6	6 0 0
30 × 10	3000	130	9	7 5 0

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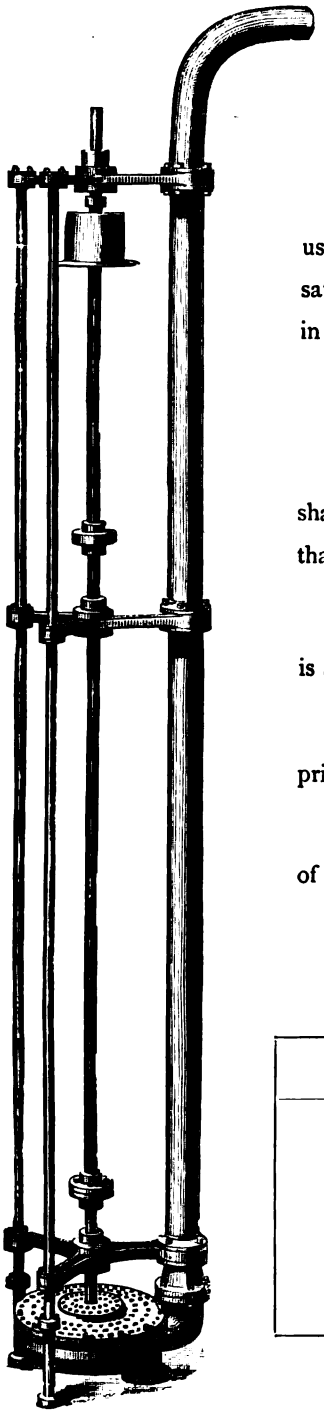

SYKES' IMPROVED CAGE PUMPS.

An extensive experience in the application of Pumps for Contractors' use has led me to construct this new Pump, which has given general satisfaction, and has the greatest approval of Contractors of experience in Pumps for their works. Its advantages are as follows:

1. It will pump in a depth of 9 inches of water.

2. The framework is light and well adapted for sinking: the driving shaft being made from cast steel, makes this part lighter and stronger than from iron shafting.

3. The Pump cannot possibly choke: any matter which gets into it is at once discharged.

4. There are no valves to the Pump, and it does not require priming.

5. A decided increase in its discharge of water at a less expenditure of power over any Pump of similar character.

PRICES.

No	No. of Gallons discharged per Minute.	Price for the first 10 feet.	Price of each additional 9-feet length afterwards.
		£	£ s. d.
1	250	30	8 0 0
2	400	42	9 0 0
3	600	52	10 10 0
4	1000	60	11 0 0
5	1700	80	13 0 0

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

Any Engine, Pump, Hand or Steam Crane, Hoist, Winding Engine, Mortar Mill, or other Machinery in Stock may be had ON HIRE.

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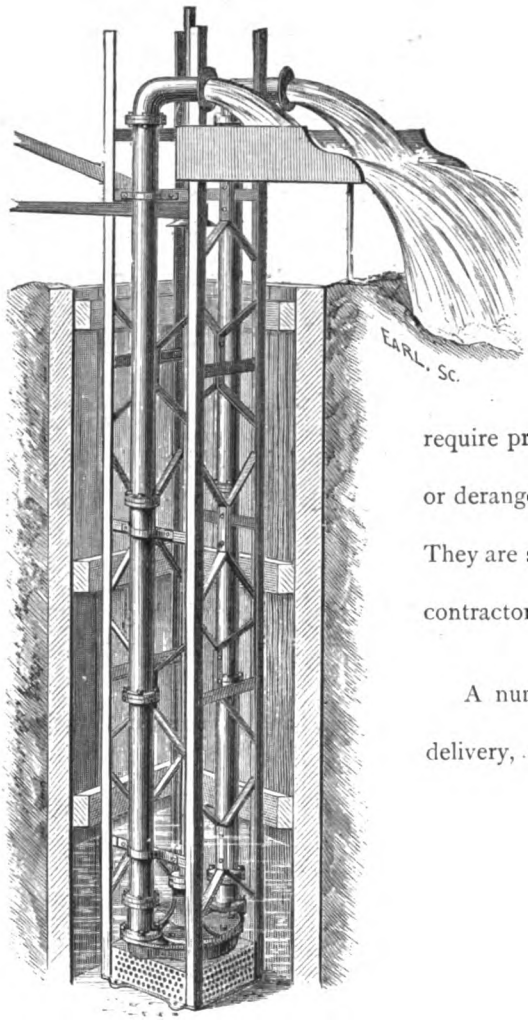

CENTRIFUGAL PUMPS

(WOODFORD'S).

These Pumps are simple, and not liable to get out of order, having no valves. They do not require priming before starting, and are not subject to stoppage or derangement by the admission of stones, or other substances. They are suitable for bridge, embankment work, and for general contractors' purposes.

A number of these Pumps are kept in stock ready for delivery, for hiring, and other purposes.

PRICES.

Gallons discharged per Minute.	Diameter of Pipes.	For 10 feet high.	Each extra 9-feet length of Framing, Shafting, &c.
£	inches.	£ s. d.	£ s. d.
500	3¼	42 10 0	9 0 0
1000	4½	54 10 0	10 5 0
1500	5½	66 10 0	12 12 0
2000	6¼	85 0 0	13 10 0
3000	8¼	121 0 0	15 5 0
5000	10½	181 10 0	18 5 0

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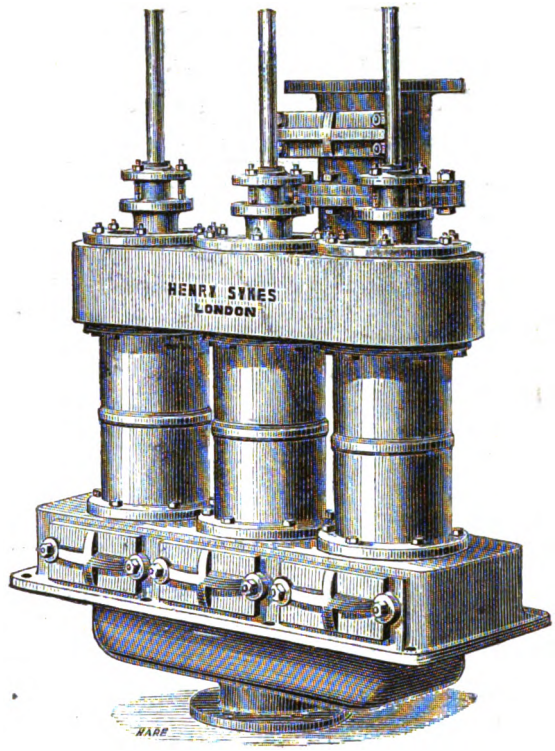
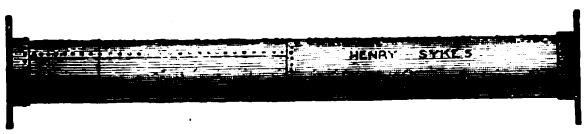
LIFT AND FORCE PUMPS.

I have made and fixed Pumps of this sort, with barrels up to 12 inches in diameter, in connection with Horizontal Fixed Engines; and shall be glad to give prices and particulars to intending purchasers.



STOUT WROUGHT-IRON RIVETED FLANGED PIPES.



Length of Pipe.	Diameter of Pipe in Inches.																							
	4"			5"			6"			7"			8"			9"			10"			12"		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
3 feet	1	1	0	1	10	0	1	16	0	2	8	0	3	17	0	4	10	0	5	10	0	7	10	0
6 ,,	1	17	0	2	2	0	2	14	0	3	15	0	5	3	0	6	15	0	9	10	0	10	10	0
9 ,,	2	13	0	3	0	0	3	17	0	6	10	0	7	17	0	9	10	0	11	10	0	17	10	0

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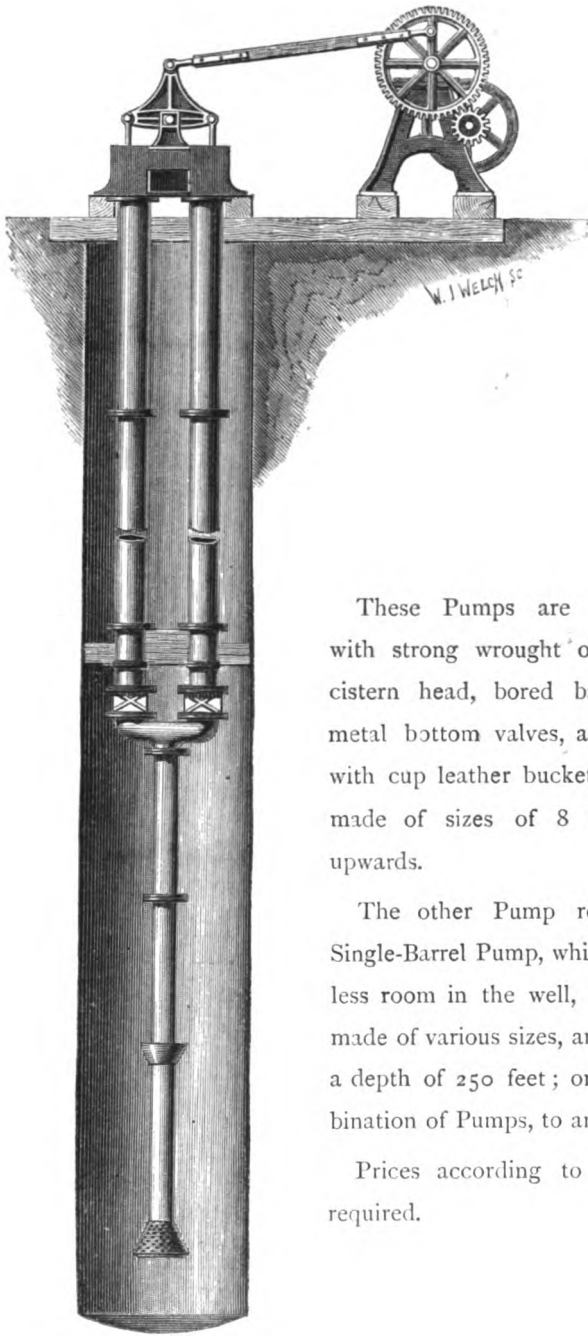
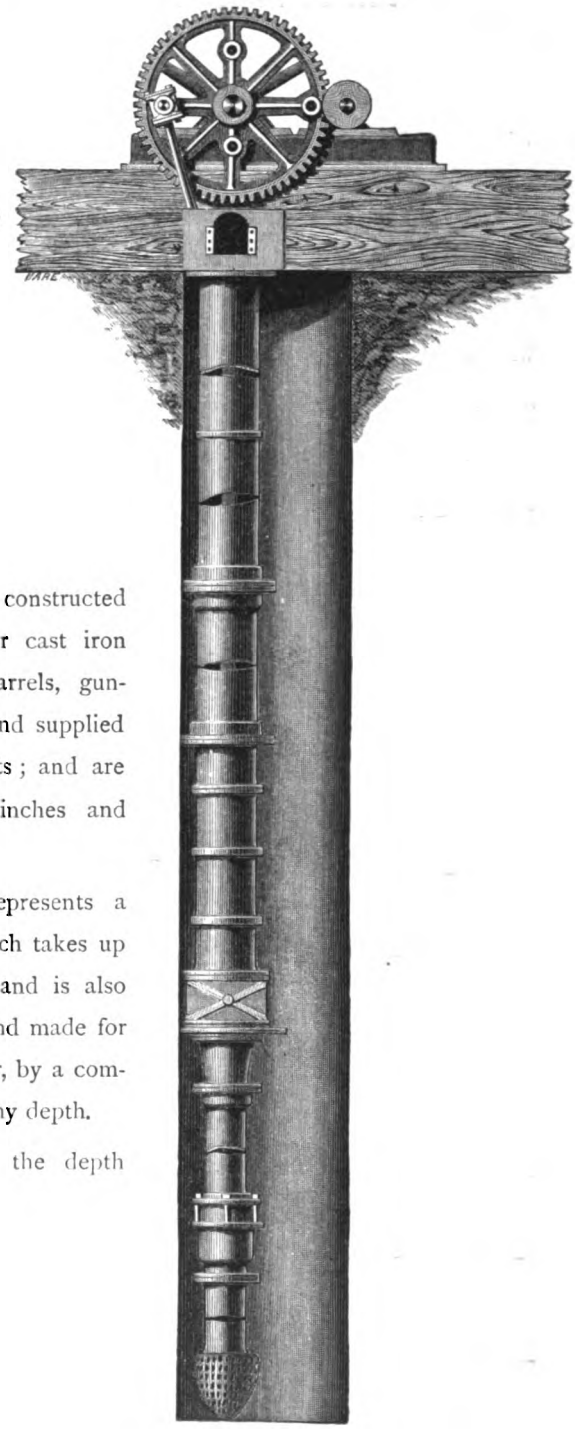
DEEP-WELL PUMPS.





These Pumps are constructed with strong wrought or cast iron cistern head, bored barrels, gun-metal bottom valves, and supplied with cup leather buckets; and are made of sizes of 8 inches and upwards.

The other Pump represents a Single-Barrel Pump, which takes up less room in the well, and is also made of various sizes, and made for a depth of 250 feet; or, by a combination of Pumps, to any depth.

Prices according to the depth required.

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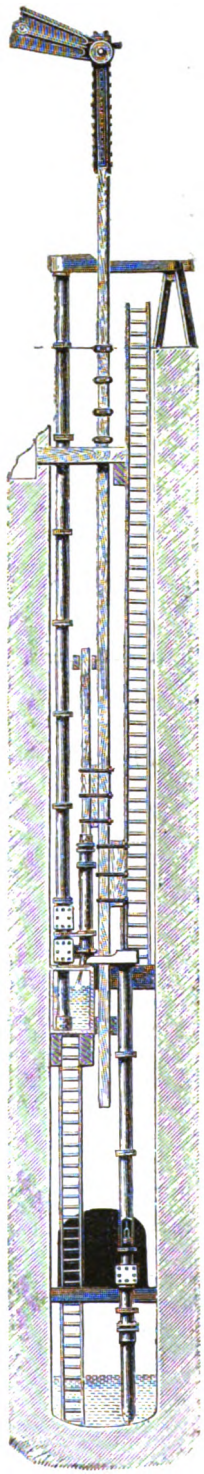
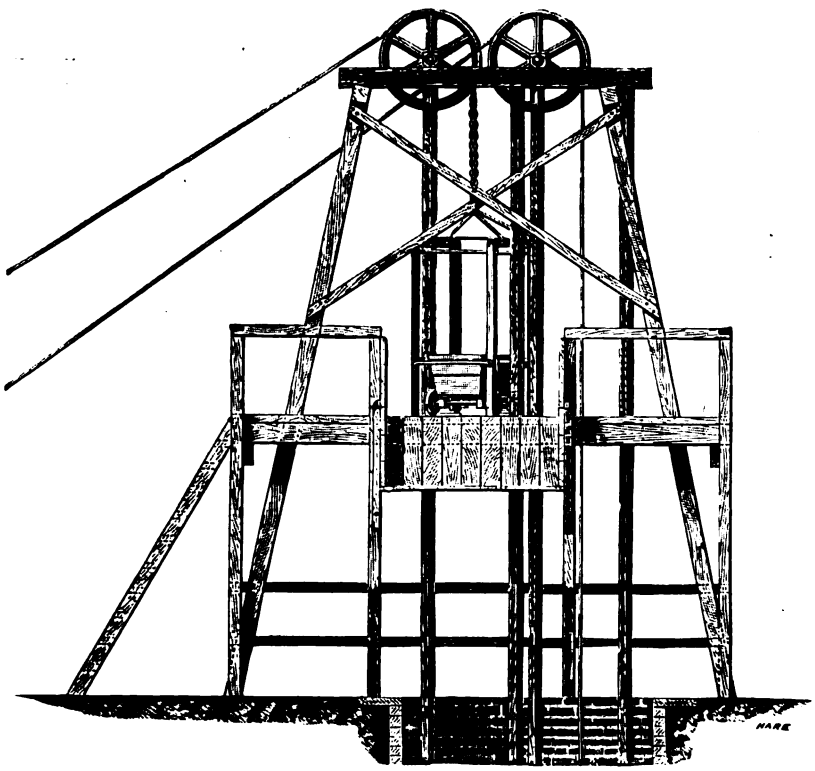
DEEP-WELL PUMP.



PIT-HEAD GEAR.



SPECIFICATIONS AND PRICES

OF THIS

DEEP-WELL PUMPING MACHINERY, AND PIT-HEAD WINDING GEAR,

MAY BE HAD UPON APPLICATION.

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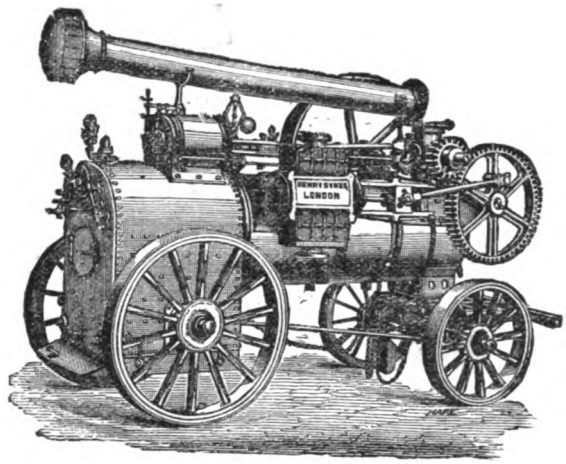
STEAM PUMPING ENGINE.



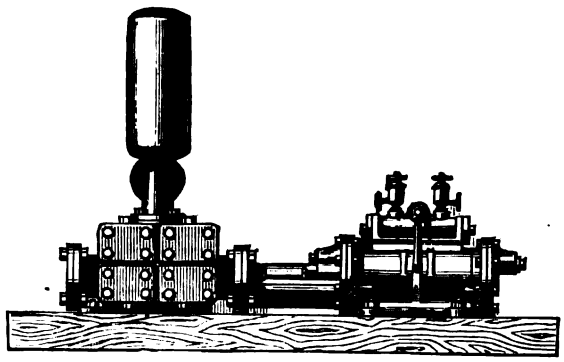
The Illustration represents a Portable Engine arranged in connection with a powerful Double-Action Lift and Force Pump. The Pump Barrel is lined with Gun Metal, and the valve seats and guards are of the same material; the valves are of indiarubber. The Engine can be used for any other work for which an ordinary Portable is adapted.

Horse-Power.	Diameter of Cylinder in Inches.	Diameter of Pump Barrel.	Water raised per Hour in Gallons.
5	7¾	6″	8000
8	9½	8″	14500

Suction and Delivery Pipe extra.

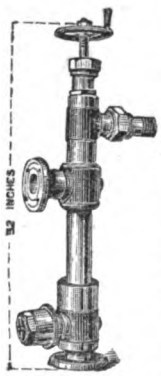
Present Prices on application.

SEVERAL OF THESE PUMPS ARE KEPT



IN STOCK FOR HIRING PURPOSES.

INJECTORS.



No. of Injector.	For Lift and Force. Prices at the Works. Constructed to Lift their Water from a Lower Level. Brass. 1.		For Lift and Force. Prices at the Works. Constructed to Lift their Water from a Lower Level. Iron. 2.		For Force only. Prices at Works. Not to Lift. Brass. 3.		For Force only. Prices at Works. Not to Lift. Iron. 4.		Internal Diameter of Pipes.	STEAM PRESSURE. 30lb.	40lb.	50lb.	60lb.	70lb.	80lb.	90lb.	100lb.	110lb.	120lb.	130lb.	140lb.
	£	s.	£	s.	£	s.	£	s.	in.	DELIVERY IN GALLONS PER HOUR.											
A	3	10	..		2	5	..		½	47	53	63	65	71	76	80	85	89	93	97	100
B	3	15	..		2	10	..		¾	104	120	135	148	160	170	181	190	200	210	218	226
C	6	5	..		4	5	..		1	290	335	375	410	444	475	503	529	557	581	604	627
D	8	15	6	5	6	0	3	15	1	418	482	540	592	638	682	724	762	800	836	867	903
E	12	0	8	10	8	5	6	0	1¼	742	847	958	1050	1100	1213	1287	1357	1424	1486	1544	1605
F	15	0	11	0	10	10	8	5	1½	1161	1340	1498	1642	1774	1896	2065	2120	2215	2322	2417	2506
G	17	0	13	0	12	0	9	10	2	1405	1621	1813	1988	2159	2293	2433	2565	2691	2809	2925	3036
H	20	0	14	0	..		11	0	2	1672	1930	2155	2365	2554	2730	2896	3052	3202	3345	3481	3613
I	25	0	18	0	17	0	14	0	2½	2275	2525	2935	3220	3480	3710	3940	4150	4360	4550	4737	4917
K	30	0	26	0	22	0	18	0	2½	2970	3430	3833	4205	4545	4850	5150	5427	5690	5947	6187	6420

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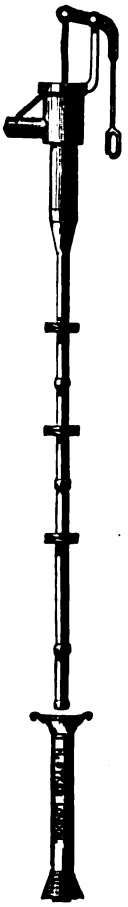
PORTABLE WROUGHT-IRON CONTRACTORS' HAND PUMPS.



Strong and useful, with Suction Pipes in convenient lengths, and Sliding Suction for sinking; all complete, with Bolts and Packing to 28 feet under Spout.

PRICES.

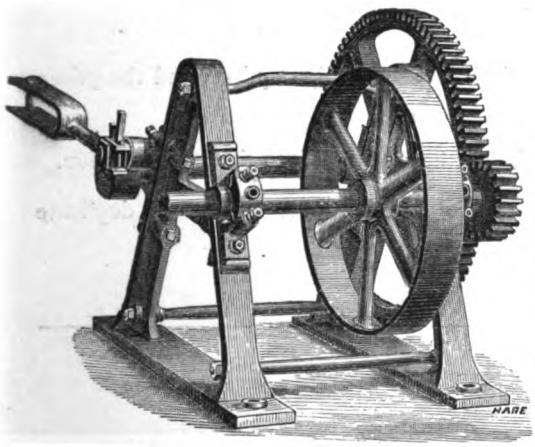
	£	s.	d.
4-inch Barrel	7	17	6
5 ,, ,, ...	9	0	0
6 ,, ,, ...	10	15	0
7 ,, ,, ...	12	17	6

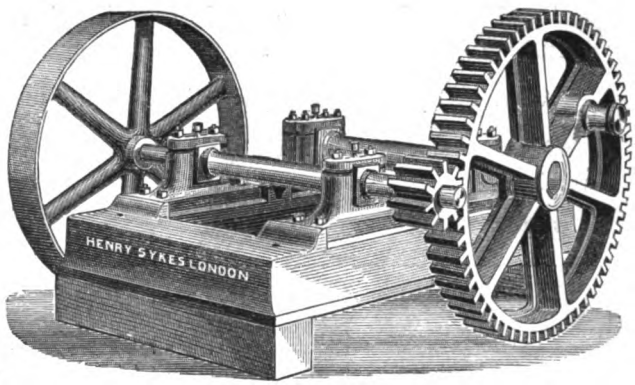
The Prices below show the cost of the above Pump for 7 feet under Spout, the Pipes per foot, and the Sliding Suctions separately:

Diameter of Barrel.	7 feet below Spout.			Pipes per foot.		Sliding Suction, 8 feet long.		
inches.	£	s.	d.	s.	d.	£	s.	d.
4	3	0	0	3	6	2	6	0
5	3	9	0	4	0	2	12	0
6	4	6	0	4	10	2	18	0
7	5	3	6	5	6	3	10	0
8	7	10	0	7	0	4	0	0
9	9	4	0	8	9	5	5	0

N.B.—The 8-inch and 9-inch Pumps are 9 feet under Spout, with Sliding Suctions to sink 10 feet long.

INTERMEDIATE GEARING.





These two Illustrations show different sets of Gear for driving Deep Well and Contractors' Pumps, of various sizes, according to the capacity of the Pumps.

Prices and further particulars on application.

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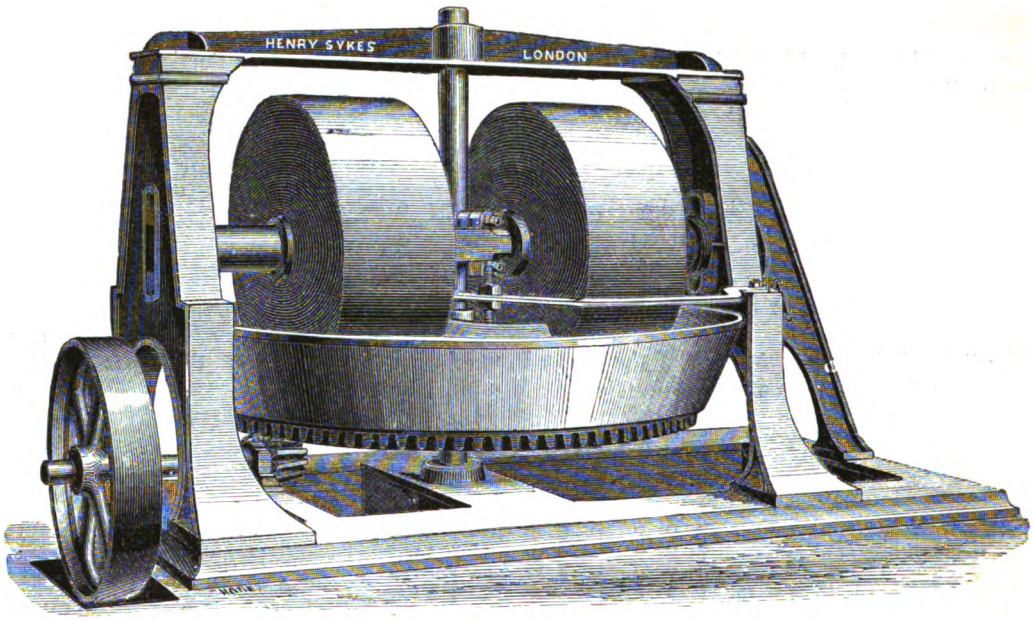
MORTAR MILLS.



All the Mortar Mills for the "District," and nearly all for the Metropolitan Railways, as well as for many other Works, were supplied by me, of similar construction to the one here represented, but the base of the standards is now extended and other improvements introduced to make the Mill more rigid when working.

Both the Pan and Rollers revolve, as will be understood by reference to the Woodcut.

The Pans are fitted with loose bottom plates, so that when worn out these can be renewed at little cost.

The Mill, as shown, has a metal foundation plate: this is not generally required, and the prices quoted are for Mills without it.

All necessary bolts are supplied with each Mill to fit it together and bolt it to timber foundation.

About twenty of these Mills are always kept ready, also false bottoms and other duplicate wearing parts.

PRICES.

Diameter of Pan at top.		Size of Rollers.				Price.
ft.	in.	ft.	in.		in.	£
5	0	2	8	×	10	44
6	0	3	0	,,	12	50
7	0	3	6	,,	16	72
7	6	3	6	,,	16	80
9	0	3	6	,,	22	118

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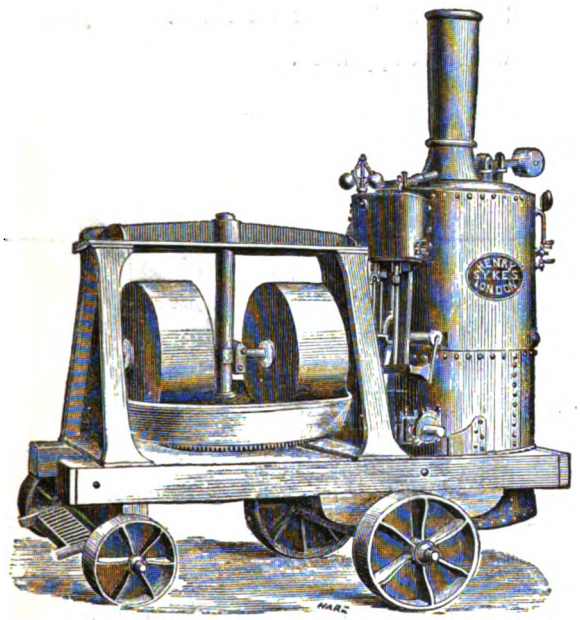
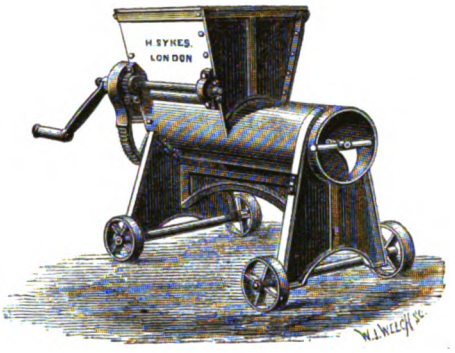
PORTABLE MORTAR MILLS.

The price of these Portable Mortar Mills, with 5-feet pans, complete, with Mill Engine and Frame, and mounted on wheels, is £130; and for 6-feet Mill with larger Engine, £150.



HAND MORTAR MILL.

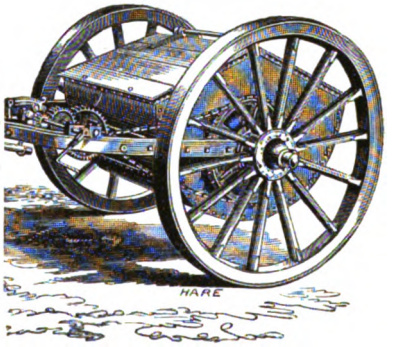
Price, complete, £9 each.



IMPROVED MORTAR CART.

The body of this Cart is made of Wrought-Iron Plates, and is perfectly water-tight.

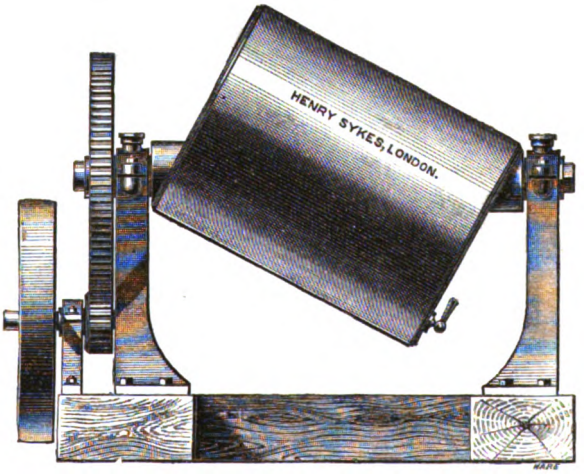
Small size, £26 10s.
Large ,, £35 10s.



CONCRETE MIXERS.

Prices of Concrete Mixers, with Wrought-Iron Cylinders, to hold

⅓ yard	.. ..	£38
½ ,,	.. ..	44
¾ ,,	.. ..	48
1 ,,	.. ..	56



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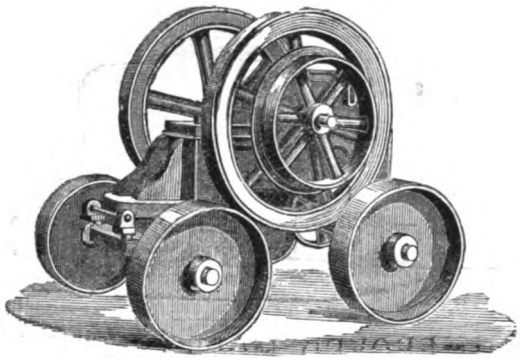
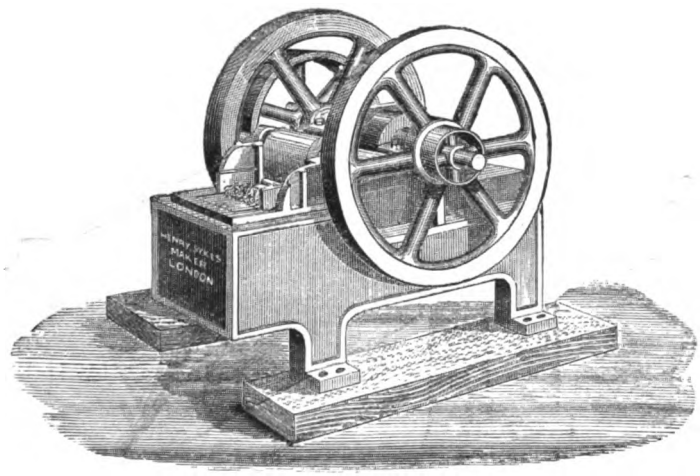
STONE BREAKERS.



Since the expiry of Blake's Patent, I have become a Maker of these Machines, prices of which are appended.

Machine on Wheels.	Prices.	Weight of Machine.	Quantity of Metal produced per Hour.	H.-P. required to drive.	Price of Vertical Engines.
6 × 4	£75	2 tons 6 cwt.	2 tons	2½ H.-P.	£100
10 ,, 7	150	5 ,, 5 ,,	4 ,,	4 ,,	130
15 ,, 7	185	6 ,, 12 ,,	6 ,,	6 ,,	175
20 ,, 9	250	8 ,, 16 ,,	8 ,,	8 ,,	215



The product of the Machines without wheels and the horse-power to drive them is the same as the above.

Prices of Machines without wheels.

10 × 7	£130
15 ,, 7	£170
20 ,, 9	£220

If the Machines are supplied with Screens, they are £10 extra for any size.

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CIRCULAR-SAW BENCHES.

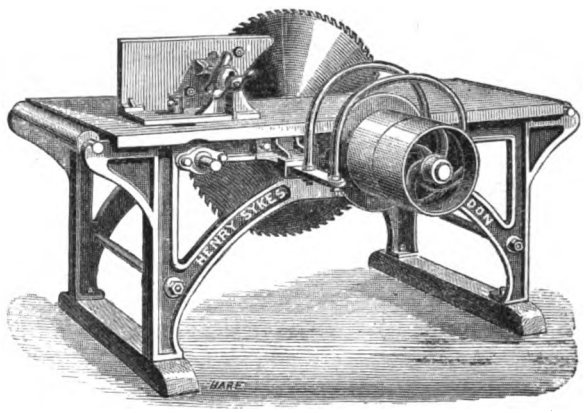
THE FRAMES are of Iron, extra strong, with *Planed Iron Tables.*

THE CIRCULAR SAWS are the best Machine Ground, and are efficiently steadied in the Table.

THE SAW SPINDLES run in extra long Brass Conical Bearings, with Adjustable Carriages.

THE DRIVING PULLEYS are of suitable size and width to be driven direct from the Fly Wheel of a Portable Engine if required.

THE PARALLEL FENCES slide on a strong Turned Bar, and can be adjusted with the greatest accuracy to a Scale marked on the Table. They also have Slide Plates fitted on face, to adapt them to Saws of various sizes.



IRON ROLLERS are fixed at the ends of Nos. 2 and 3 Tables, to facilitate the moving of the Timber.

These Benches, when required, can be fitted with any or all of the following Appliances:

DIAGONAL MOTION attached to the Parallel Fences for Feather-edge Cutting.

LOOSE PULLEY AND STRAP THROWING-OFF GEAR, with Lever under handy control.

BORING APPARATUS, with four Patent Boring Bits, conveniently arranged at opposite end of Spindle to Driving Pulleys.

BORING TABLE, working in a Sliding Column, fitted with a Cross Slide to ensure accuracy in boring, and regulated by a Hand Wheel and Screw to any required distance from centre of Bit.

PRICES:

Including One Saw, as specified.

	£	s.	d.
No. 1.—Table 4 feet long by 2 feet broad, fitted with 24-inch Saw	18	0	0
Loose Pulley and Throwing-off Gear, extra	£1 10 0		
Diagonal Motion to Fence, extra	0 10 0		
Boring Apparatus and 4 Boring Bits, extra	1 10 0		
Boring Table, extra	2 10 0		
Packed for Shipment, in closed Case, extra	0 12 0		
Dimensions of Case, 14 feet cube. Weight, 6 cwt.			
No. 2.—Table 5 feet long by 2 feet 6 inches broad, fitted with 30-inch Saw, but capable of taking a 36-inch Saw	24	0	0
Loose Pulley and Throwing-off Gear, extra	£1 15 0		
Diagonal Motion to Fence, extra	0 15 0		
Boring Apparatus and four Boring Bits, extra	1 10 0		
Boring Table, extra	3 0 0		
Packed for Shipment, in closed Case, extra	0 16 6		
Dimensions of Case, 26 feet cube. Weight, packed, 13 cwt.			
No. 3.—Table 6 feet long by 2 feet 8 inches broad, fitted with 36-inch Saw, but capable of taking a 42-inch Saw	35	0	0
Loose Pulley and Throwing-off Gear, extra	£2 0 0		
Diagonal Motion to Fence, extra	0 15 0		
Boring Apparatus and four Boring Bits, extra	1 10 0		
Boring Table, extra	3 10 0		
Packed for Shipment, in closed Case, extra	1 5 0		
Dimensions of Case, 46 feet cube. Weight, 22 cwt.			

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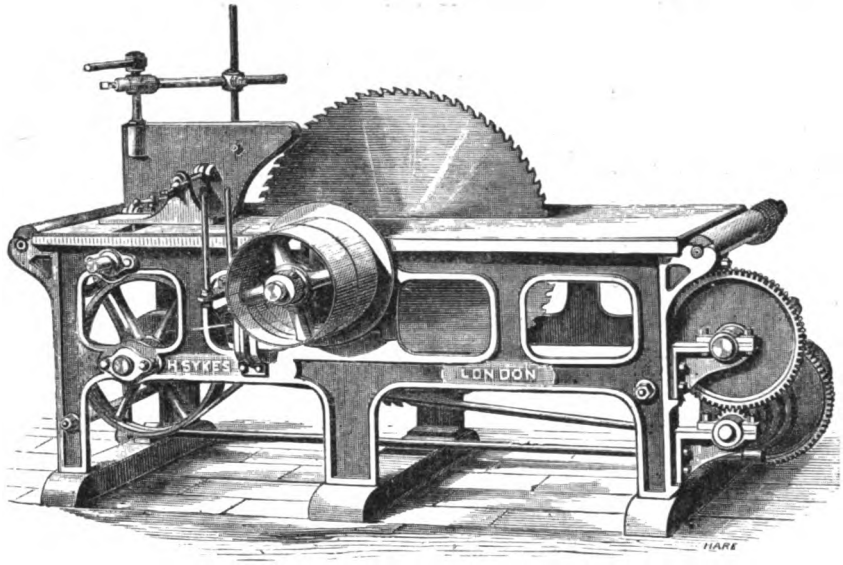
SELF-ACTING CIRCULAR-SAW BENCHES.



These Benches are on the same principle as those described on page 289, but of much stronger construction throughout, and are fitted with Self-Acting Feed Motion for drawing up the timber to the Saw at speeds varying from 10 to 60 feet per minute. They are also provided with Fast and Loose Pulleys, Strap Throwing-off Gear, and Spring Rollers to the Fences (to ensure accuracy in Deal Cutting), inclusive in the price.

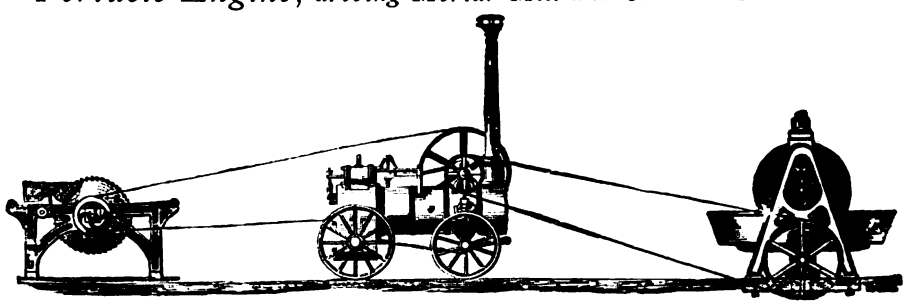
PRICES:

.. Including One Saw, as specified.

	£	s.	d.
No. 4.—Table 6 feet long by 2 feet 8 inches broad, fitted with 36-inch Saw, but capable of taking a 42-inch Saw, complete, as specified	62	0	0
Boring Apparatus and Bits, extra £2 0 0			
Boring Table, extra 3 10 0			
Packed for Shipment, in closed Case, extra 1 15 0			
Dimensions of Case, 52 feet cube. Weight, 24 cwt.			
No. 5.—Table 8 feet long by 3 feet broad, fitted with 42-inch Saw, but capable of taking a 48-inch Saw, complete, as specified	76	0	0
Boring Apparatus and Bits, extra £2 0 0			
Boring Table, extra 4 0 0			
Packed for Shipment, in closed Case, extra 2 5 0			
Dimensions of Case, 93 feet cube. Weight, 38 cwt.			

TIMBER RAILS AND TRUCKS. When required for cutting long timber, Rails and Carriages mounted on turned wheels, for supporting the timber and guiding it true to the saw, are supplied at the extra price of £15.

Portable Engine, driving Mortar Mill and Circular-Saw Bench.



The above Illustration shows a Portable Engine working a Mortar Mill and a Circular-Saw Bench; the latter being driven from the Engine Fly-Wheel and the Mortar Mill from a Pulley fitted to opposite end of Crank Shaft. The machines may be worked either both at one time or separately, as desired.

An arrangement of this kind is often of the greatest advantage to Contractors, Builders, and others; and the Engine, when not wanted for the works named, may be readily applied to Pumping, or any other purpose to which steam power is applicable.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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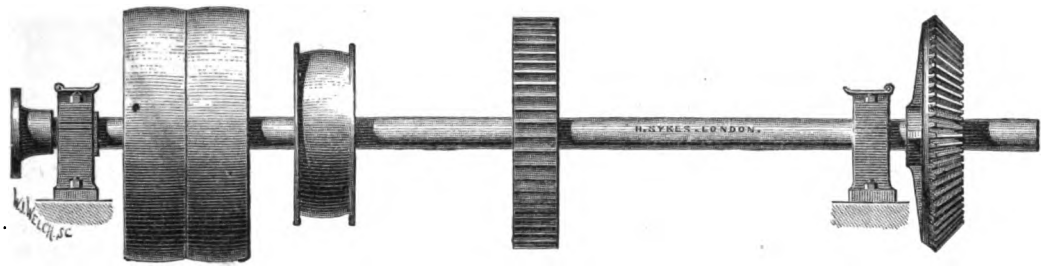
PULLEYS AND SHAFTING.



PRICES OF PULLEYS TURNED AND BORED.

Diameter in Inches.	INCHES BROAD.								
	4	5	6	7	8	9	10	11	12
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
10	10 0	12 6	14 0	16 6	18 6	19 6	20 0	23 0	24 0
11	11 6	13 6	15 0	17 9	19 6	21 6	22 6	25 0	26 0
12	12 6	14 6	16 0	18 9	20 6	24 0	24 0	27 0	28 0
13	13 6	15 6	17 0	20 0	22 0	24 0	25 6	29 0	30 0
14	14 6	16 6	18 6	21 0	24 0	26 0	27 0	31 0	33 0
15	15 6	17 6	19 6	22 0	26 0	28 0	29 0	33 0	35 0
16	17 0	18 6	21 0	23 6	28 0	30 0	31 0	35 0	37 0
17	17 6	19 6	22 0	25 0	30 0	31 0	33 0	37 0	39 0
18	18 9	20 6	23 6	26 0	32 0	33 6	35 0	39 0	41 0
19	19 3	21 6	24 6	27 6	34 0	35 0	37 0	41 0	43 0
20	20 0	23 0	25 9	29 0	35 6	37 0	39 0	43 0	46 0
21	21 0	24 0	28 0	30 6	36 6	39 0	41 0	48 0	50 0
22	22 0	25 0	30 0	33 0	38 0	41 0	43 0	50 0	54 0
23	23 0	26 0	31 3	35 0	40 0	43 0	48 0	52 0	56 0
24	24 0	27 0	32 9	37 0	42 0	45 6	50 0	54 0	58 0
25	25 0	28 0	34 0	39 0	44 0	49 0	52 0	56 0	60 0
26	26 0	30 0	36 0	40 6	46 0	50 0	54 0	58 0	62 0
27	27 0	31 0	37 6	42 0	48 0	52 0	56 0	61 0	66 0
28	28 0	32 0	38 6	44 0	50 0	54 0	58 0	63 0	69 0
29	29 6	33 0	39 6	45 6	52 0	56 0	60 0	65 0	71 0
30	31 6	34 6	41 0	47 0	54 0	58 0	62 0	67 0	73 0
31	32 6	36 0	42 6	48 3	56 0	60 0	64 0	69 0	75 0
32	33 6	37 0	43 6	50 0	58 0	62 0	66 0	71 0	77 0
33	34 6	38 0	45 0	52 0	60 0	64 0	68 0	73 0	79 0
34	36 0	39 0	46 6	54 0	61 6	65 6	70 0	75 0	81 0
35	37 0	40 0	48 0	55 0	63 0	67 0	72 0	77 0	84 0
36	38 0	41 6	49 0	56 0	64 0	69 0	74 0	79 0	86 0
37	39 0	42 6	50 0	57 6	66 0	70 6	76 0	82 0	88 0
38	40 0	43 6	51 6	59 0	68 0	72 0	78 0	85 0	90 0
39	41 0	44 6	52 9	60 6	70 0	73 0	80 0	88 0	93 0
40	42 0	45 6	54 0	62 0	71 0	75 0	82 0	90 0	96 0
41	43 0	47 6	56 0	64 0	72 0	77 0	84 0	93 0	99 0
42	44 0	48 9	58 0	66 0	73 0	79 0	86 0	96 0	102 0
43	45 0	50 6	60 0	68 0	74 0	81 0	89 0	99 0	105 0
44	46 0	51 6	61 0	69 0	75 0	83 0	91 0	102 0	108 0
45	47 0	53 6	62 0	70 6	77 0	85 0	95 0	105 0	111 0
46	48 0	54 6	63 0	72 0	78 0	87 0	97 0	107 0	114 0
47	49 0	56 0	64 6	73 0	80 0	90 0	99 0	109 0	116 0
48	50 0	57 0	66 6	75 0	82 0	92 0	101 0	110 0	118 0
54	55 0	62 6	74 0	84 0	95 0	102 0	113 0	120 0	130 0
60	63 0	71 0	83 0	101 0	103 0	114 0	123 0	135 0	144 0
72	84 0	96 0	114 0	126 0	138 0	150 0	162 0	175 0	186 0

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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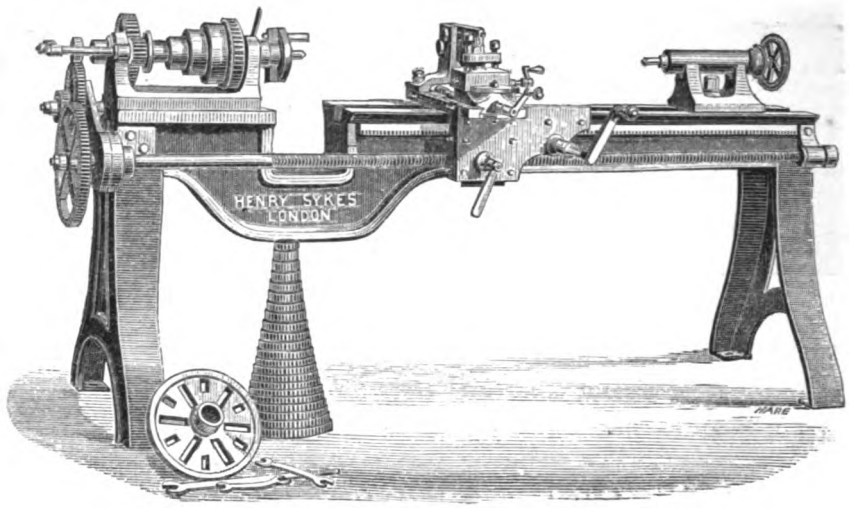
LATHES.



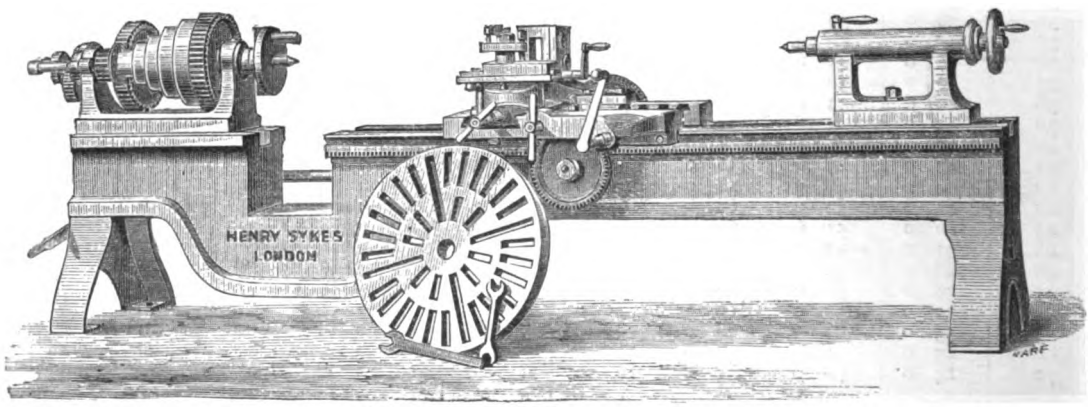
The Tools illustrated and described below are made from the pattern of the known best makers of their class.

Purchasers may have an opportunity of seeing some of the Tools at work at 66, Bankside, and satisfying themselves as to their character and completeness.

Any Tool in work may be had at the quoted prices.

SELF-ACTING SLIDE AND SURFACING LATHES.

Height of Centres.	Length of Bed.	Will admit between the Centres.	Gap will admit diam.	wide.	Price.	Extra, if Screw Cutting.
inches.	feet.	feet.	in.	in.	£	£
6	6	3¼	24 ×	8	65	10
8	10	6	36 ,,	12	85	12
10	14	9	42 ,,	14	110	15
12	16	11	48 ,,	18	135	18
15	16	12	60 ,,	18	195	25



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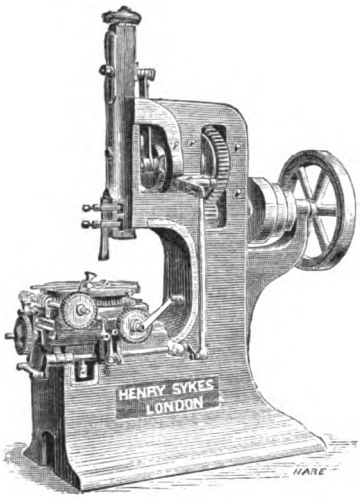


SLOTTING MACHINES.

PRICES.

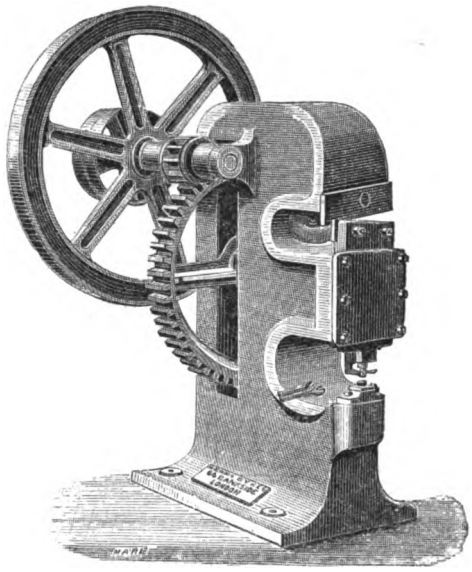
Length of Stroke.	Will admit in Diameter.	Price.
inches.	ft. in.	£
5	1 6	64
9	3 6	130

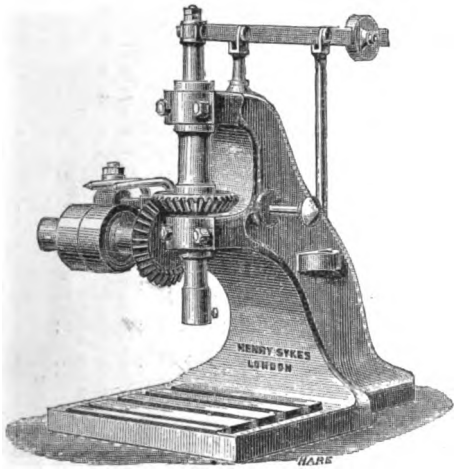
All fitted with Self-acting Slides, Self-acting Circular Table with Self-acting and Independent Feeds, Adjustable Stroke, &c., and the last five are fitted with arrangement for slotting taper work.

PUNCHING AND SHEARING MACHINES.

To Punch and Shear Plates.	Distance from the Edge.	Price.
inch thick.	inches.	£
¾	14	60
1	20	220

All fitted with one Punch and Die, and one pair Cast-Steel Shears.





DRILLING MACHINES.

Will admit in Diameter in front of Pillar.	Will bore holes diam. deep.	Price. Double Geared.	Price. Single Geared.
ft. in.	in. in.	£	£
2 4	3 × 10	65	55
3 0	6 × 14	95	..
4 0	12 × 18	135	..

All fitted with Overhead Motion, Rising Swing Table, Screw Keys, &c.

Small Ungeared Drilling Machine, on Stand, to bore holes up to ¾ inch diameter by 3 inches deep, with Rising Table, &c., £21.

HENRY SYKES, 66, BANKSIDE, LONDON, S.E.

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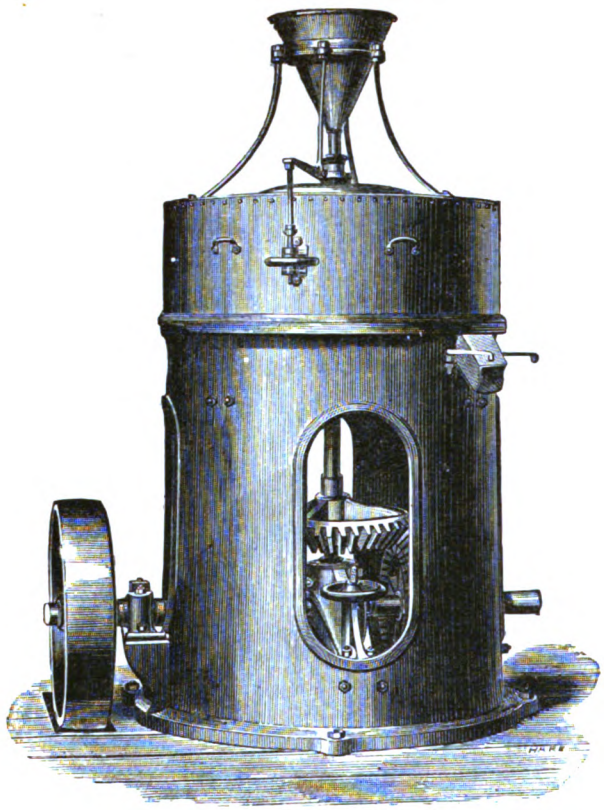


GRINDING MILLS,

IN CYLINDRICAL OR CONTINUOUS IRON FRAMES,

FOR GRINDING WHEAT, BARLEY, AND OTHER PRODUCE.

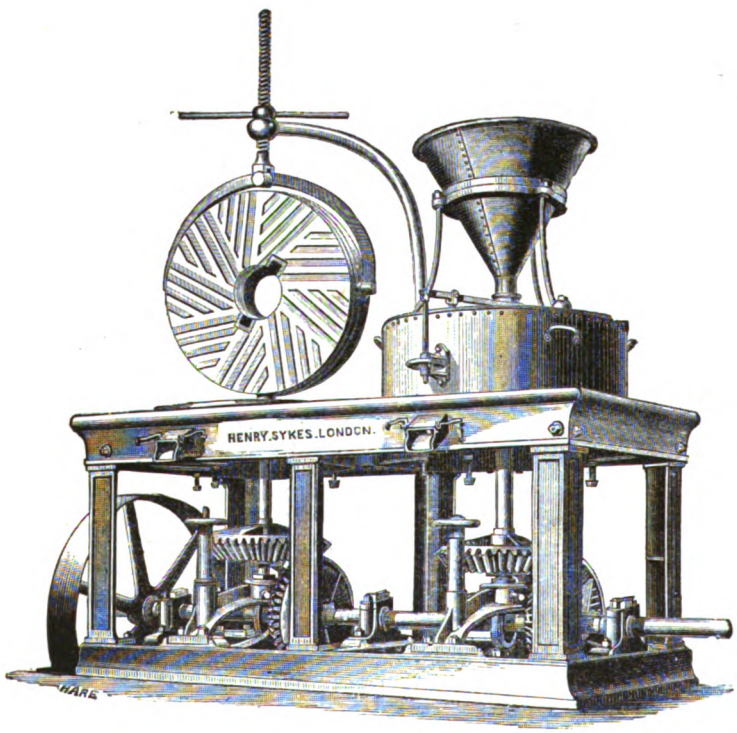
The Single Mills are constructed in Cylindrical Iron Frames, as illustrated. When two or more pairs are required connected together, they are fixed in strong continuous Iron Framing: any number up to six pairs can be constructed in this manner, and driven from one lay shaft.

These Mills embody the following important advantages and improvements:

1. Self contained in Cast-Iron Frame, requiring no Foundations or connections to Buildings.
2. Very compact and steady in work.
3. Ready method of Driving by means of the large Pulley fixed on horizontal Shaft of Mill, either direct from a Portable Engine or other motive power, or from a line of shafting.
4. Handy adjustments for regulating the Fineness of Grinding, and the supply of Grain to the Stones.
5. The Feeding Motion is Noiseless.
6. The Stone-Case, Hopper, and Stand are all Iron, are consequently much more durable, and not affected by climate.

English Grey Stones are suitable for grinding Barley, crushing Oats, or kibbling Beans; but for producing Fine Wheaten Flour, French Stones are necessary.

In some instances Grey Runner Stones, with French Bed Stones, are preferred for general purpose Mills. The French Beds, being much harder, are more durable, and Mills so fitted will grind either Wheat or Barley.



PRICES PER PAIR.

Diameter of Stones ..	2 ft. 2 in.	2 ft. 8 in.	3 ft.	3 ft. 6 in.	4 ft.
	£ s.	£ s.	£ s.	£ s.	£ s.
Fitted with Derbyshire Grey Stones	37 0	48 0	55 0	66 0	80 0
Fitted with French Bed and Grey Runner	41 0	53 0	61 0	75 0	90 0
Fitted with French Burr Stones	44 0	58 0	68 0	82 0	104 0
Crane for lifting Stones ..	7 0	7 0	7 0	7 0	7 0
Packing for Shipment ..	1 15	2 0	2 10	3 5	3 15
Produce per hour:					
Fine Flour .. .. Bushels	2	2½	3	3½	5
Coarse Flour .. .. ,,	3½	4½	6	8	10

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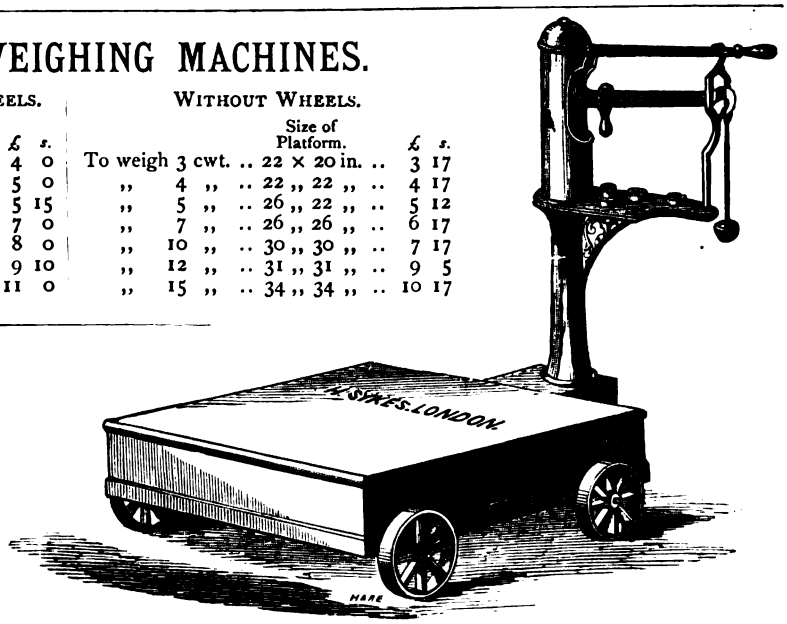
PORTABLE WEIGHING MACHINES.

MOUNTED ON TRAVELLING WHEELS.

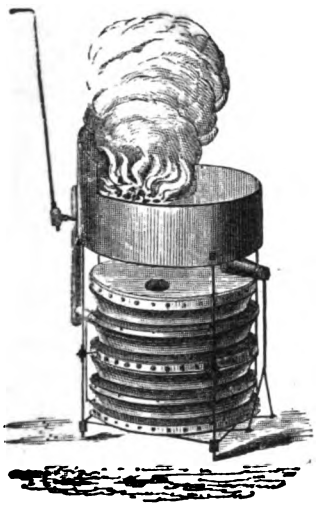
	Size of Platform.	£	s.
To weigh 3 cwt. ..	22 × 20 in. ..	4	0
,, 4 ,, ..	22 ,, 22 ,, ..	5	0
,, 5 ,, ..	26 ,, 22 ,, ..	5	15
,, 7 ,, ..	26 ,, 26 ,, ..	7	0
,, 10 ,, ..	30 ,, 30 ,, ..	8	0
,, 12 ,, ..	31 ,, 31 ,, ..	9	10
,, 15 ,, ..	34 ,, 34 ,, ..	11	0

WITHOUT WHEELS.

	Size of Platform.	£	s.
To weigh 3 cwt. ..	22 × 20 in. ..	3	17
,, 4 ,, ..	22 ,, 22 ,, ..	4	17
,, 5 ,, ..	26 ,, 22 ,, ..	5	12
,, 7 ,, ..	26 ,, 26 ,, ..	6	17
,, 10 ,, ..	30 ,, 30 ,, ..	7	17
,, 12 ,, ..	31 ,, 31 ,, ..	9	5
,, 15 ,, ..	34 ,, 34 ,, ..	10	17



PATENT CIRCULAR PORTABLE FORGE.



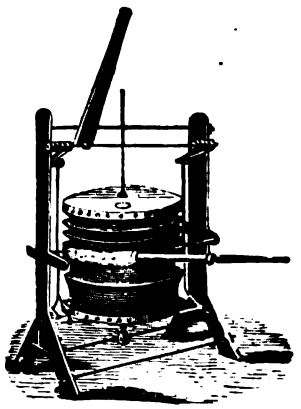
PRICES.

16 inches	£5 2	each.
18 ,, ...	5 15	,,
20 ,, ...	6 15	,,

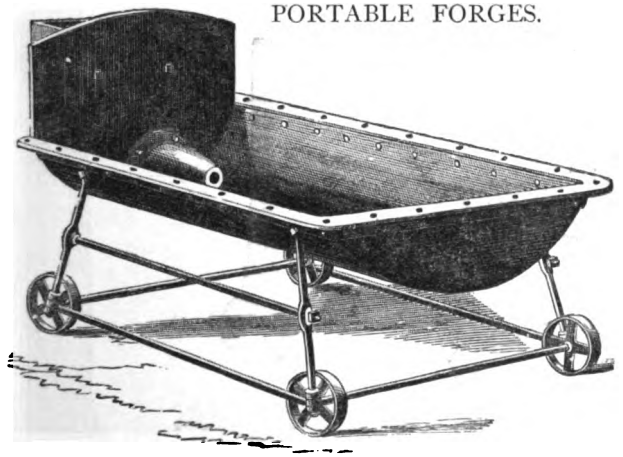
IMPROVED CIRCULAR BELLOWS, SINGLE BLAST.

PRICES.

		£	s.
16 inches, complete		4	5
18 ,, ,, ...		5	2
20 ,, ,, ...		5	15
22 ,, ,, ...		6	10
24 ,, ,, ...		7	4
26 ,, ,, ...		8	5
28 ,, ,, ...		9	15
30 ,, ,, ...		10	0
32 ,, ,, ...		12	2
34 ,, ,, ...		14	0
36 ,, ,, ...		15	10



PORTABLE FORGES.



Price of the above, complete, £13.

PORTABLE VICE-STANDS.

Fitted with Vice, and strong Wood Tool-Box below. Price £8.

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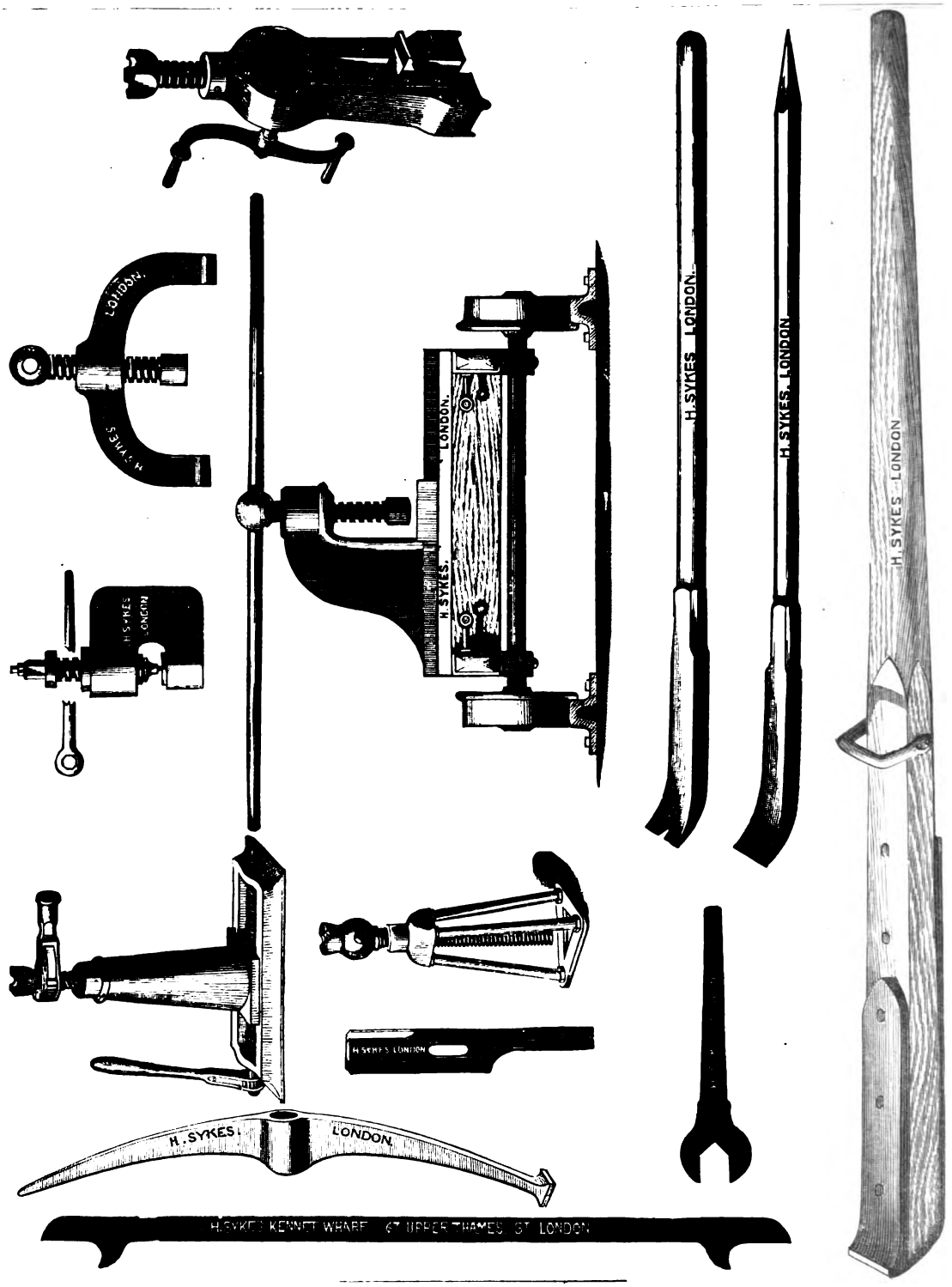

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